



كلية الطب
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Faculty of Medicine
Quality Assurance Unit

Medical Doctorate (M.D.) Degree Program and Courses Specification for Clinical Oncology

(According to currently applied Credit point bylaws)

**Clinical Oncology and nuclear
medicine**

**Faculty of Medicine
Aswan University
2019-2020**

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A. Professional Information

1- Program aims

1/1 To enable candidates to master high level of clinical skills, bedside care skills, in addition to update medical knowledge as well as clinical experience and competence in the area of clinical oncology

1/2 Provide candidates with fundamental knowledge of Clinical Oncology regarding; Skillful management of different cancers; professional communication with cancer patients, mastering the indications, contraindications and use of chemotherapy in different cancers. Becoming knowledgeable about current and recent radiotherapy techniques and different radiotherapy equipments, in addition to knowledge of recent National and International policies and treatment recommendations in the field of Clinical Oncology.

1/3 To enable candidates to perform high standard scientific medical research and learn how to proceed with publications in indexed medical journals.

1/4 To enable candidates to describe the basic ethical and medico-legal principles relevant to Clinical Oncology.

1/5 To enable candidates to have professional careers as a consultant in Egypt and to be recognized abroad.

1/6 To enable candidates to continue self education in subspecialties.

1/7 To enable candidates to assess and analyze different research methodologies and do their own.

2-Intended learning outcomes (ILOs) *for the whole program:*

2/1 Knowledge and understanding:

- A. Demonstrate in-depth knowledge and understanding of theories, basics and updated biomedical, clinical epidemiological and socio-behavioral science relevant to Clinical Oncology as well as the evidence-based application of this knowledge to patient care.
- B. Explain basics, methodology, tools and ethics of scientific medical, clinical research.
- C. Mention ethical, medico logical principles and bylaws relevant to his practice in the field of Clinical Oncology
- D. Mention principles and measurements of quality assurance and quality improvement in medical education and in clinical practice of Clinical Oncology.
- E. Mention health care system, public health and health policy, issues relevant to this speciality and principles and methods of system-based improvement of patient care in common health problems of the field of Clinical Oncology.

2/2 Intellectual outcomes

- A. Apply the basic and clinically supportive sciences which are appropriate to the speciality related conditions / problem / topics.
- B. Demonstrate an investigatory and analytic thinking “problem – solving “approaches to clinical situation related to Clinical Oncology.
- C. Plan research projects.
- D. Write scientific papers.
- E. Participate in clinical risk management as a part of clinical governance.
- F. Plan for quality improvement in the field of medical education and clinical practice in his speciality.
- G. Create / innovate plans, systems, and other issues for improvement of performance in his practice.

- H. Present and defend his / her data in front of a panel of experts.
- I. Formulate management plans and alternative decisions in different situations in the field of Clinical Oncology.

2/3 Skills

2/3/1 Practical skills (Patient Care)

Students will be able to:

- A. Provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
p.s. Extensive level means in-depth understanding from basic science to evidence-based clinical application and possession of skills to manage independently all problems in field of practice.
- B. Provide extensive level of patient care *for patients with all common diagnoses and for uncomplicated procedures* related to Clinical Oncology.
- C. Provide extensive level of patient care *for non-routine, complicated patients and under increasingly difficult circumstances*, while demonstrating compassionate, appropriate and effective care.
- D. Perform diagnostic and therapeutic procedures considered essential in the field of Clinical Oncology.
- E. Handles unexpected complications, while demonstrating compassion and sensitivity to patient needs and concerns.
- F. Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families in Clinical Oncology related situations.
- G. Gather essential and accurate information about patients of Clinical Oncology related conditions.
- H. Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence and clinical judgment for Clinical Oncology related conditions.
- I. Develop and carry out patient management plans for Clinical Oncology related conditions.

- J. Counsel and educate patients and their families about speciality related conditions.
- K. Use information technology to support patient care decisions and patient education in all Clinical Oncology related clinical situations.
- L. Perform competently all medical and invasive procedures considered essential for Clinical Oncology related conditions / area of practices.
- M. Provide health care services aimed at preventing Clinical Oncology related health problems.
- N. Lead health care professionals, including those from other disciplines, to provide patient-focused care in Clinical Oncology related conditions.
- O. Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets. (Write and evaluate a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and evaluating comprehensive, timely and legible medical records)

2/3/2 General skills

Including:

- Practice-based Learning and Improvement
- Interpersonal and Communication Skills
- Professionalism
- Systems-based Practice

Practice-Based Learning and Improvement

- A. Demonstrate the competency of continuous evaluation of different types of care provision to patients in the different area of Clinical Oncology
- B. Appraise scientific evidence.
- C. Continuously improve patient care based on constant self-evaluation and life-long learning.

- D. Participate in clinical audit and research projects.
- E. Practice skills of evidence-based Medicine (EBM).
- F. Educate and evaluate students, residents and other health professionals.
- G. Design logbooks.
- H. Design clinical guidelines and standard protocols of management.
- I. Appraise evidence from scientific studies related to the patients' health problems.
- J. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies.
- K. Use information technology to manage information, access on-line medical information; for the important topics.

Interpersonal and Communication Skills

L. Master interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals, including:-

- Present a case.
- Write a consultation note.
- Inform patients of a diagnosis and therapeutic plan completing and maintaining comprehensive.
- Timely and legible medical records.
- Teamwork skills.

M. Create and sustain a therapeutic and ethically sound relationship with patients.

N. Elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.

O. Work effectively with others as a member or leader of a health care team or other professional group.

Professionalism

P. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society.

Q. Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.

R. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities.

Systems-Based Practice

S. Work effectively in health care delivery settings and systems related to Clinical Oncology including good administrative and time management.

T. Practice cost-effective health care and resource allocation that does not compromise quality of care.

U. Advocate for quality patient care and assist patients in dealing with system complexities.

V. Design, monitor and evaluate specification of under and post graduate course and programs.

W. Act as a chair man for scientific meetings including time management.

3- Program Academic Reference Standards (ARS) (Annex 2)

Academic standards for Medical Doctorate (MD) degree in Clinical Oncology

Assiut Faculty of Medicine developed MD degree programs' academic standards for different clinical specialties.

In preparing these standards, the General Academic Reference Standards for post graduate programs (GARS) were adopted. These standards set out the graduate attributes and academic characteristics that are expected to be achieved by the end of the program. These standards were approved by the faculty council on 20 /3.2010.

These standards were revised and approved without changes by the Faculty Council 22-8-2014

4- Program External References

2. ACGME (Accreditation Council for Graduate Medical Education).

http://www.acgme.org/acWebsite/navPages/nav_Public.asp

3. The American Board of Physician Specialties (ABPS)'s radiation oncology board <http://www.abpsus.org/radiation-oncology>

4. Clinical Oncology Fellowship of the Royal College of Radiologists (FRCR)

<http://www.rcr.ac.uk/section.aspx?pageID=10>

Comparison between program and speciality external reference		
Item	Clinical Oncology program	American Board of Physician Specialties (ABPS)'s radiation oncology board
Goals	Matched	Matched
ILOS	Matched	Matched
Duration	4 -6 years	Different
Requirement	Different	Different
Program structure	Different	Different

5- Program Structure

Duration of program: 4-6 years

B. Structure of the program:

Total number of credit points: = 420 CP

Master degree: 180 credit point

Didactic #: 37 CP (23.1%), practical 123 (76.9%), total 160 CP

Thesis and researches: 80 CP (33.3%)

First part

Didactic 10 (100%), practical 0 (0 %), total 10 CP

Second part

Didactic 24, (16.3%), practical 123 (83.7%), total 147 CP

Elective courses: 3 credit points

#Didactic (lectures, seminars, tutorial)

According the currently applied bylaws:

Total courses: 160 credit point

Compulsory courses: 157 credit point (98.1%)

Elective courses: 3 credit point (1.9%)

	Credit point	% from total
Basic science courses	10	4.1%
Humanity and social courses	3	1.2%
Speciality courses	147	61.3%
Others (Computer, ...)	-	0
Field training	123	51.3%
Thesis	40	16.7%
2 published researches	40	16.7%
Master degree	180	

C. Program Time Table

Duration of program 4 years divided into

- Part 1

Program-related basic science courses

Program-related basic science courses

- Medical statistic
- Research methodology
- Medicolegal Aspects and Ethics in Medical Practice and Scientific Research

Students are allowed to sit the exams of these courses after 6 months from applying to the M D degree.

Students are allowed to sit the exams of the remaining basic science courses after 12 months from applying to the MD degree.

Thesis and 2 published researches

For the M D thesis;

MD thesis subject should be officially registered within 1 year from application to the MD degree,

Discussion and acceptance of the thesis should not be set before 24 months from registering the M D subject;

It could be discussed and accepted either before or after passing the second part of examination

- Part 2

Program-related speciality courses and ILOs

Students are not allowed to sit the exams of these courses before 4 years from applying to the MD degree.

Two elective courses can be set during either the 1st or 2nd parts. The students pass if they get 50% from the written exams and 60% from oral exams, 60% from clinical/practical exams of each course and 60% of summation of the written exams, oral and clinical/practical exams of each course

Total degrees 1700 marks.

500 marks for first part

1200 for second part

Written exam 40%-70%.

Clinical/practical and oral exams 30% - 60%.

Curriculum Structure: (Courses):

✚ Levels and courses of the program:

Courses and student work load list	Course Code	Credit points		
		didactic #	training	total
First Part				
Basic science courses (10 CP)				
1) Course 1: Physics of radiation 2) Course 2: Pathology of tumours 3) Course 3: Radiobiology	FAC309A	1		1
	FAC309B	1		1
	FAC310C	1		1
4)Course 4: Internal medicinerelatedtooncology	ONM327B#	3		3
5) Course 5: General Surgery relatedtooncology	ONM327A§	2		2
	ONM327C#	2		2
Elective courses*	3 CP			
- Elective course 1		1.5		1.5
- Elective course 2		1.5		1.5
Thesis	40 CP			
Published researches**	40 CP			
Second Part	Speciality courses 24 CP Speciality Clinical Work (log Book) 123 CP			
Speciality Courses Course 5 " Clinical Oncology 2" Clinical Oncology Technology of Radiotherapy	ONM327 D	24		24
Speciality Clinical Work (123 CP)	ONM327 D		123	123
Total of second part		24	123	147

#Didactic (lectures, seminars, tutorial)

* Elective courses can be taken during either the 1st or 2nd parts.

Student work load calculation:

Work load hours are scheduled depending on the type of activities and targeted competences and skills in different courses

Elective Courses#:

- Advanced medical statistics.
- Evidence based medicine.
- Advanced infection control.
- Quality assurance of medical education.
- Quality assurance of clinical practice.
- -Hospital management

Two of the above mentioned courses are prerequisites for fulfillment of the degree.

3. Thesis /Researches:

40 CP are appointed to the completion and acceptance of the thesis.

** Another 40 points are appointed to acceptance or publication of one research from the thesis in international indexed medical journals or publication of 2 researches from the thesis in local specialized medical journals.

6. Courses Contents (Annex 1)

The competency based objectives for each course/module/rotation are specified in conjunction with teaching/training methods, requirements for achieving these objectives and assessment methods.

See Annex 1 for detailed specifications for each course/ module
Annex 6 II: Program Matrix

7-Admission requirements

+ Admission Requirements (prerequisites) if any :

+ General Requirements:

- Master degree in the chest diseases and tuberculosis

+ Specific Requirements:

- Fluent in English (study language)

VACATIONS AND STUDY LEAVE

The current departmental policy is to give working assistant
leave prior to first/ second part exams.
lecture 2 week

FEES:

As regulated by the postgraduate studies rules and approved by the faculty vice dean of post graduate studies and the faculty and university councils.

8-Progression and completion requirements

- + Examinations of the first part (Medical statistic, Research methodology and Medicolegal Aspects and Ethics in Medical Practice and Scientific Research) could be set at 6 months from registering to the MD degree.
- + Students are allowed to sit the exams of the remaining essential courses of the first part after 12 months from applying to the MD degree.
- + Examination of the second part cannot be set before 4 years from registering to the degree.

- + Discussion of the MD thesis could be set after 2 years from officially registering the MD subject, either before or after setting the second part exams.
- + The minimum duration of the program is 4 years.

The students are offered the degree when:

1. Passing the exams of all basic science, elective and speciality courses of this program as regulated by the post graduates approved rules by the faculty council.
2. Completing all scheduled CP and log book (minimum 80%).
3. Discussion and acceptance of the MD thesis.
4. Acceptance or publication of one research from the thesis in international indexed medical journals or publication of 2 researches from the thesis in local specialized medical journals.

9-Program assessment methods and rules (Annex IV)

ILOs measured	Method
K & I	Written examinations: Structured essay questions Objective questions MCQ Problem solving
K ,I, P &G skills	Clinical: Long/short cases OSCE
K ,I &G skills	Structured oral
All	Logbook assessment
I &G skills	Research assignment

Weighting of assessments:

Courses		Degrees			
Courses	Course Code	Written Exam	Oral *	Practical / Clinical Exam	Total
First Part					
Basic science courses:					
Medical Statistics	FAC309A	35	15		50
Research Methodology	FAC309B	35	15		50
Medicolegal Aspects & Ethics in Medical Practice and Scientific Research	FAC310C	35	15		50
Clinical Oncology 1 Physics of radiation and radiobiology	ONM327A§	85	65		150
Internal Medicine and General Surgery	ONM327B#	60	40		100
Pharmacology and Oncopathology	ONM327C#	70	30		100
Total of the first part					500
Second Part					
	Course code	written	Oral *	Practical / Clinical Exam	total
Speciality Courses					
Clinical Oncology 2	CHT319B		360	360	1200
Paper 1 :Clinical Oncology 2					
Paper 2 :Clinical Oncology 2		120			
Paper 3: Technology of radiotherapy		120			
Paper 4: Commentary		120			
Total of The second part		480	360	360	1200
Elective course 1		50		50	100
Elective course 2		50		50	100

*25% of the oral exam for assessment of logbook

*25% of the oral exam for assessment of logbook

500 marks for first part

1200 for second part

Written exam 40% (480 marks)

Clinical /practical and oral exams 60% (720 marks)

Elective courses 200

 **Examination system:**

 **First part:**

- Written exam 2 hours in Medical Statistics and Research Methodology + oral examination
- Written exam 1 hours in Medicolegal Aspects and Ethics in Medical Practice and Scientific Research + oral examination
- Written exam 3 hours in Clinical Oncology 1Physics of radiation and radiobiology + oral exam
- Written exam 2 hours in Internal Medicine and General Surgery + oral exam
- Written exam 2 hours in Pharmacology and Oncopathology + oral exam

 **Second part:**

- Written exam four papers 3 hours for each in Clinical Oncology exam+ Clinical/Practical exam

 **Elective courses**

- Written exam one paper 1 hour in Elective course 1 + Oral & Practical exam
- Written exam one paper 1 hour in Elective course 2 + Oral & Practical exam

10-Program evaluation

By whom	Method	sample
Quality Assurance Unit	Reports Field visits	#
External Evaluator (s): According to department council External Examiner (s): According to department council	Reports Field visits	#
Stakeholders	Reports Field visits questionnaires	#
Senior students	Questionnaires	#
Alumni	Questionnaires	#

#Annex 5 contains evaluation templates and reports (Joined in the departmental folder).

11-Declaration

We certify that all of the information required to deliver this program is contained in the above specification and will be implemented.

All course specifications for this program are in place.

Contributor	Name	Signature	Date
Program Principle Coordinator:	Prof. Samir Shehata	Samir Shehata	
Head of the Responsible Department (Program Academic Director):	Prof. Samir Shehata	Samir Shehata	

Annex 1, Specifications for Courses / Modules

Annex 1: specifications for courses

First Part

- 1) Course 1: Medical Statistics
- 2) Course 2: Research Methodology
- 3) Course 3: Medicolegal Aspects and Ethics in Medical Practice and Scientific Research
- 4) Course 4: Clinical Oncology 1 Physics of radiation and radiobiology
- 5) Course 5: Internal Medicine and General Surgery
- 6) Course 6: Pharmacology and Oncopathology

Course 1: Medical statistics

Name of department: Public Health and Community Medicine
Faculty of medicine
Assiut University
2016-2017

1. Course data

- + Course Title: Medical statistics
- + Course code: FAC309A
- + Speciality: offered to all clinical and academic specialties
- + Number of credit points: 1 credit point
- + Department (s) delivering the course: Pubic Health and Community Medicine
- + Coordinator (s):
 - Course coordinator: Prof. Ahmed M. Hany
 - Assistant coordinator (s):
Prof. Farag Mohammed Moftah
Prof. Hosnia Saeed Abdel Majeed
- + Date last reviewed: September 2017
- + Requirements (pre-requisites) if any :
 - Completed Master degree in any of the academic or clinical departments of Medicine.

2. Course Aims

Enable graduate students to use statistical principles to improve their professional work and develop the concept of critical interpretation of data

3. Intended learning outcomes (ILOs): To be able to use statistical principals to manage data

A knowledge and understanding

ILOS	Methods of teaching/ learning	Methods of Evaluation
A. List the types of variables	Lecture and discussion	Written examination
B. Identify the methods of data collection	Lecture and discussion	Written examination
C. Describe the different sampling strategies	Lecture and discussion	Written examination
D. Identify types of tabular and graphic presentation of data	Lecture and discussion	Written examination
E. Identify measures of central tendency and dispersion	Lecture and discussion	Written examination
F. Identify the characters of normal distribution curve.	Lecture and discussion	Written examination

B. intellectual

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Describe the normal curves.	Lecture & Discussions	Written examination
B. Describe and summarize data	Lecture & Discussions	Written examination
C. Select the proper test of significance	Lecture & Discussions	Written examination
D. Interpret the proper test of significance	Lecture & Discussions	Written examination

C. Practical skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Design data entry files.	Tutorial on SPSS	Assignments SPSS exam
B. Validate data entry.	Tutorial on SPSS	Assignments SPSS exam
C. Manage data files.	Tutorial on SPSS	Assignments SPSS exam
D. Construct tables and graphs.	Tutorial on SPSS	Assignments SPSS exam
E. Calculate measures of central tendency and dispersion.	Tutorial on SPSS	Assignments SPSS exam
F. Select, apply and interpret the proper test of significance.	Tutorial on SPSS	Assignments SPSS exam

D general skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Appraise scientific evidence	Discussions	Research assignment
B. Use information technology to manage information, access on-line medical information; for the important topics.	tutorial	Research and audits' assignment

4. Course contents (topic s/modules/rotation Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skills C	General Skills D
Introduction	A-F	A-D	-	A&B
Tables and graphics	D	A-D	-	A&B
Sampling	C	-	-	A&B
Methodology of data collection	B	-	-	A&B
Type of variables	A	-	-	A&B
Proportion test& Chi-square test	E,F	C&D	-	A&B
Student T test& Paired T test	E,F	C&D	F	A&B
ANOVA test	E,F	C&D	F	A&B
Non parametric tests	E,F	C&D	F	A&B
Discrimination analysis factor analysis	E,F	C&D	-	A&B
SPSS Introduction	A-F	A-D	-	A&B
Data entry and cleaning of data	A	A-D	A-C	A&B
Transforming of variables	A	A&B	A-C	A&B
Descriptive statistics	D	A-D	D&E	A&B
Graphic presentation	D	A&B	D	A&B
Chi square and interpretation of results	E,F	C&D	F	A&B
Correlation Regression	E,F	C&D	F	A&B
Multiple and logistic Regression	E,F	C&D	F	A&B

5. Course Methods of teaching/learning

1. Lectures
2. Assignments
3. Discussions
4. Exercises
5. Tutorial on SPSSv.16

6. Course assessment methods:

i. Assessment tools:

1. Practical examination
2. Attendance and active participation
3. Assignments
4. SPSS examination
5. written exam

ii. **Time schedule:** After 6 months from applying to the M D degree.

iii. **Marks:** 50 (35 for written exam and 15 for oral exam).

7. List of references

i. Lectures notes

Department lecture notes

ii. Essential books

Medical statistics

Recommended books

Discovering statistics using SPSS

iii. Periodicals, Web sites, etc

8. Signatures

Head of the Department:

- Prof. Omaila El Gibaly

Date: 17/9/2017

Course Coordinator:

- Prof. Ahmed M. Hany

Date: 17/9/2017

Course 2: Research Methodology

Name of department: All clinical and academic departments

Faculty of medicine

Assiut University

2016-2017

1. Course data

-  Course Title: Research methodology
-  Course code: FAC309B
-  Speciality: Offered to all clinical and academic specialties
-  Number of credit points: 1 credit point
-  Department (s) delivering the course: Department of public health
-  Coordinator (s):
 - Course coordinator: Prof. Ali Zarzour
 - Assistant coordinator (s):

Prof. Mohamed H. Qayed
Prof. Omaila El-Gibaly
-  Date last reviewed: September 2017
-  Requirements (prerequisites) if any :
 - Completed Master degree in any of the academic or clinical departments of Medicine.

2. Course Aims

To provide graduate students with the skills of:

- Research proposal,
- Writing planning and implementing rigorous research,
- Writing and publishing scientific papers.

3. Intended learning outcomes (ILOs): To be able to write a rigorous research proposal

A knowledge and understanding

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Explain differences between different study designs	Lecture and discussion	Written examination
B. Identify sources and types of bias in research		
C. Describe the different sampling strategies, and compute sample size		
D. Select and design valid measurement tools for research		
E. Explain ethical issues in conducting research on human subjects		
F. describe the rules of authorship in scientific writing		
G. List the steps involved in proposal writing		
H. Identify a research problem within a conceptual framework	Lecture on Criteria to	discussion

	Consider to identify a research problem	
I. Use the web sources to do a literature search	Practical tutorial on web	assignment
J. Select the appropriate study design for the research question	Lecture on various study designs	Written examination
K. Minimize bias in designing research	Lecture on the different types of bias	Written examination
L. Screening & theoretical background	Lectures on criteria for successful screening program & criteria for evaluation a screening test.	Written examination

B. intellectual

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A. Apply basic science & knowledge for appraising scientific literature	Discussions & seminars	Written examination

C. Practical skills

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A. Develop a budget and time line for the research	Tutorial	Assignments
B. Design a data entry file	Tutorial on Epi-info or Excel	Assignments Written exam
C. Identify steps required in fielding the study	Lecture	Assignments Written exam
D. Identify steps required for calculation Sensitivity, Specificity, positive predictive value, negative predictive value, Accuracy of a screening test	Lecture	Assignments Written exam

D general skills

Practice based learning improvement & professionalism

(Scientific Paper writing skills)

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A. To be able to write an abstract	Tutorial	Written examination case study for critique
B. Write the introduction	Tutorial	Written examination
C. Write the methodology section	Tutorial	Written examination
D. Present the results	Tutorial	Written examination
E. Perform Discussion section	Tutorial	Written examination
F. Learn Authorship ethical rules	Tutorial	Written examination

4. Course contents (topic s/modules/rotation Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skills C	General Skills D
Introduction & proposal writing	G	A	A	A-F
Epidemiological Study designs	A,J	A	B,C	-
Screening & theoretical background	L	A	-	-
Screening practical	L	A	D	-
Sample size calculation	B	A	B,C	-
Research bias	H	A	C	F
Ethics in research	E,F	A	C	F

5. Course Methods of teaching/learning:

1. Lectures
2. Assignments
3. Discussion
4. Exercises

6. Course assessment methods:

i. Assessment tools:

1. Written examination
2. Attendance and active participation
3. Class
4. Assignments

ii. **Time schedule:** After 6 months from applying to the M D degree.

iii. **Marks:** 50 (35 for written exam and 15 for oral exam).

7. List of references

i. Lectures notes

- Department lecture notes

ii. Essential books

- An epidemiologic Approach to Reproductive Health, CDC, FHI, and WHO Phyllis A. wingo, James E. Higgins, Goerge L. Rubin, and S. Christine Zahniser

iii. Recommended books

- Evidence Based Medicine How to practice and teach EBM.
- David Sachett, Sharon E. Straus, W. Scott Richardson , William Rosenberg R. Brain Haynes

iv. Periodicals, Web sites, ... etc

- Dissertation workshop open courseware JHSPH
-

8. Signatures

Head of the Department: - Prof. Omaina El Gibaly	Course Coordinator: - Prof. .Ali Zarzour
Date: 17/9/2017	Date: 17/9/2017

Course 3: Medicolegal Aspects and Ethics in Medical Practice and Scientific Research

Name of department:
Forensic medicine and clinical toxicology
Faculty of medicine
Assiut University
2016-2017

1. Course data

- + Course Title: Medicolegal Aspects and Ethics in Medical Practice and Scientific Research
- + Course code: FAC310C
- + Speciality: *General medicine, Special medicine, Pediatrics, Public health, Oncology and Rheumatology (1st part).*
- + Number of credit points: 1 credit point
- + Department (s) delivering the course: Forensic Medicine and Clinical Toxicology
- + Coordinator (s):
 - Course coordinator:
Prof. Wafaa Mohamed Abdel Moneium
 - Assistant coordinator (s) Assist.
Prof. Amal Ali Mohammed
- + Date last reviewed: 9– 2017.
- + Requirements (prerequisites) if any :
 - Completed Master degree.

2. Course Aims

To describe the basic ethical and medicolegal principles and bylaws relevant to practice in the field of General medicine, Special medicine, Pediatrics, Public health, Oncology and Rheumatology

3. Intended learning outcomes (ILOs):

A knowledge and understanding

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A. Mention principals of Taking consent.	Lecture and discussion	Oral &Written exam
B. Mention principals of Writing a death certificate	Lecture and discussion	Oral &Written exam
C. Mention principals of diagnosing death.	Lecture and discussion	Oral &Written exam
D. Mention principals of writing toxicological reports.	Lecture and discussion	Oral &Written exam
E. Explain principals of medical reports.	Lecture and discussion	Oral &Written exam
F. List indications and principals of induced emesis, gastric lavage and samples collection.	Lecture and discussion	Oral &Written exam

B. intellectual

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A. Present case , seminars in death certificate	Lecture and discussion	Oral &Writtenexam
B. Presentcase, seminars in toxicological cases	Lecture and discussion	Oral &Writtenexam

C. Practical skills

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A. Identify medical ethics and ethics in research.	Lecture and discussion	Reading Discussion
B. Prepare and write consent.	Lecture and discussion	Reading Discussion
C. Identify medical responsibilities.	Lecture and discussion	Reading Discussion
D. Write death certificate.	Lecture and discussion	Reading Discussion and active participation
E. Deal with a case of Suspicious death	Lecture and discussion	Reading Discussion and active participation
F. Perform gastric lavage, induce emesis, and obtain samples.		
G. Write medical and toxicological reports	Lecture and discussion	Reading Discussion and active participation
H. Develop and carry out patient management plans for Euthanasia, and Organ		

Transplantation		
I. Counsel patients and their families about speciality related conditions including Permanent infirmities, Euthanasia, and Organ Transplantation		

D general skills

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A. Present a case.	Lecture and discussion	Global rating logbook
B. Write a consultation note	Lecture and discussion	Global rating logbook
C. Inform patients and maintaining comprehensive.	Lecture and discussion	Global rating logbook
D. Make timely and legible medical records	Lecture and discussion	Global rating logbook
E. Acquire the teamwork skills	Lecture and discussion	Global rating logbook

4. Course contents (topic s/modules/rotation Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge	Intellectual	Practical skills	General Skills
	A	B	C	D
1. Death and death certificate.	B,C	A	D,E	A
2. Medical Reports	A		G	A,D,E
3. Toxicological reports	D,F	B	G,F	A,E
4. Ethics in research.	A		A	
5. Medical ethics.	E		A,B,C,H,I	B,C,E

5. Course Methods of teaching/learning:

1. Lectures.
2. Discussions.
3. Exercises.

6. Course assessment methods:

i. Assessment tools:

1. Written examination.
2. Attendance and active participation.
3. Oral examination.

ii. **Time schedule:** After 6 months from applying to the M D degree.

iii. **Marks:** 50 (35 for written exam and 15 for oral exam).

7. List of references

i. Lectures notes

- Course notes.
- Staff members print out of lectures and/or CD copies.

ii. Essential books

- Ballantyne B., Marrs T. and Syversen T.(1999):General and Applied Toxicology.2nd edition. MACMILLAN REFERENCE LTD.UK.

- Bernard Knight and Pekka Saukko (2004): Knight Forensic Pathology. Hodder Arnold press

iii. Recommended books

- Klassen D. (2001): Casarett and Doull's Toxicology the basic science of poisons. McGraw-Hill press medical publishing division New York

iv. Journal and website

- Journals of all Egyptian Universities of Forensic Medicine and Clinical Toxicology.
- All International Journals of Forensic Medicine and Clinical Toxicology which are available in the university network at www.sciencedirect.com. As :
Forensic Science International Journal.
Toxicology Letter.

8. Signatures











- Head of the Department: Prof. Wafaa Mohamed Abdel Moneium	- Course Coordinator: Prof. Wafaa Mohamed Abdel Moneium
Date: 17-9-2017	Date: 17-9-2017

Course 4: Clinical Oncology 1 Physics of radiation and radiobiology

Course 4: Clinical Oncology 1 Unit 1 Physics of radiation

Name of department: of Clinical Oncology
Faculty of medicine
Assiut University
2016-2017

1. Unit data

-  **Unit Title: Physics of radiation**
-  **Unit code: ONM327A§**
-  **Speciality is Clinical Oncology**
-  **Number of credit points: 1.5 credit point for didactic (100%)**
-  **Department (s) delivering the unit: Department of physics, Cairo University in conjunction with Department of Clinical Oncology - Faculty of Medicine- Assiut- EGYPT**
-  **Coordinator (s): Staff members of Department of physics, Cairo University in conjunction with Clinical Oncology Department as annually approved by both departments councils**
-  **Date last reviewed: September 2017**
-  **Requirements (prerequisites) if any :**
 -  **None**
-  **Requirements from the students to achieve unit ILOs are clarified in the joining log book.**

2. Unit Aims

- To acquire indepth knowledge of all technical aspects of radiation therapy treatment planning, delivery, and documentation.
- To understans all technical availabilities and limitations with regard to patient set-up and beam delivery.

3. Unit intended learning outcomes (ILOs):

3. Course intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	Methods of Evaluation
<p>A. Mention physical details of:</p> <ul style="list-style-type: none"> + Structure of matter and radiation + The production and properties of X-rays + The fundamentals of nuclear physics + High energy and teletherapy machines and simulators. + Isotopic therapy machines (tele and brachytherapy) + Quality assurance of teletherapy machines and simulators. + Interaction and absorption of radiation in matter. + Measurements of radiation and dose measuring devices. + Physical principles of patients and tumor imaging including <ul style="list-style-type: none"> ● radiographic image ● tomography ● sonography ● MRI ● isodose imaging. 	<p>-Didactic (lectures, seminars, tutorial)</p>	<p>-Written and oral examination - Log book</p>

<ul style="list-style-type: none"> ✚ Dose calculation for external beam: PDD <ul style="list-style-type: none"> • TAR. • TPR. • Dose calculations. • SSD. • FAD. • Isodose curves. • Field dose calculations. • Off axial dose calculation. • Tissue inhomogeneity. ✚ Principles of external beam modification: <ul style="list-style-type: none"> • Isodose distribution. • Field arrangement. • Single field. • Parallel opposing fields. • Multiple fields. • Wedge fields. • Moving fields' technique. • Weighting. • TBI. • Adjacent fields. ✚ Electron beam (inhomogenities – field shaping). ✚ Brachytherapy (BT): <ul style="list-style-type: none"> • Physics of BT sources • Apparatus • Dose calculation. 		
<p>B. Mention the principles of Radiation protection:</p> <ul style="list-style-type: none"> • Background radiation • Dose equivalent • Protective barriers • Protection against scattered & leakage radiation. Protection against sealed sources. • Protection against unsealed sources. • Radiation survey. • Personal area and environmental monitoring. 		

<ul style="list-style-type: none"> • Waste disposal. • Storage and transfer of isotopes. • Protective regulation in RT. • Maximum allowable doses. • Risk estimates national and international regulations and license. 		
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B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Apply the basic (Physics of radiation) supportive sciences which are appropriate to related Clinical Oncology problems.	-Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to Physics of radiation.		

C- Practical skills

Practical skills = 0 credit point

D- General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Use information technology to manage information, access on-line medical information; and support their own education.	-Observation and supervision -Written & oral communication	- Oral Exam - Logbook

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Write a report in the conditions mentioned in A.A &A.B	-Observation and supervision -Written & oral communication	- Oral Exam - Logbook - Check list

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
C. Demonstrate a commitment to ethical principles.	-Observation -Senior staff experience	-Oral Exam - Logbook

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
D. Work effectively in relevant health care delivery settings and systems.	-Observation -Senior staff experience	-Log book

**4. Course contents (topic s/modules/rotation
Course (Unit 4) Matrix**

Time Schedule: First part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skills C	General Skills D
Section 1: Structure of matter and radiation	A	A&B	-	A-D
Section 2: The production and properties of X-rays	A	A&B	-	A-D
Section 3: The fundamentals of radiation physics	A	A&B	-	A-D
Section 4: High energy and teletherapy machines and simulators.	A	A&B	-	A-D
Section 5: Isotopic therapy machines (tele and brachytherapy)	A	A&B	-	A-D
Section 6: Quality assurance of teletherapy machines and simulators.	A	A&B	-	A-D
Section 7: Interaction and absorption of radiation in matter.	A	A&B	-	A-D
Section 8: Measurements of radiation and dose measuring devices.	A	A&B	-	A-D
Section 9: Physical principles of patients and tumor imaging	A	A&B	-	A-D
radiographic image	A	A&B	-	A-D

tomography	A	A&B	-	A-D
sonography	A	A&B	-	A-D
MRI	A	A&B	-	A-D
isodose imaging	A	A&B	-	A-D
Section 10: Dose calculation for external beam:	A	A&B	-	A-D
PDD.	A	A&B	-	A-D
TAR	A	A&B	-	A-D
TPR	A	A&B	-	A-D
dose calculations	A	A&B	-	A-D
SSD	A	A&B	-	A-D
FAD	A	A&B	-	A-D
Isodose curves	A	A&B	-	A-D
Field dose calculations				
Off axial dose calculation	A	A&B	-	A-D
Tissue inhomogeneity.	A	A&B	-	A-D
Section 11: Principles of external beam modification:	A	A&B	-	A-D
Isodose distribution.	A	A&B	-	A-D
Field arrangement	A	A&B	-	A-D
Single field	A	A&B	-	A-D
Parallel opposing fields.	A	A&B	-	A-D
Multiple fields.				
Wedge fields.	A	A&B	-	A-D
Moving fields' technique.	A	A&B	-	A-D
Weighting.	A	A&B	-	A-D
TBI.	A	A&B	-	A-D
Adjacent fields.	A	A&B	-	A-D
Electron beam (inhomogeneities – field shaping).	A	A&B	-	A-D
Section 12: Brachytherapy	A	A&B	-	A-D
Physics of BT sources.	A	A&B	-	A-D

Apparatus.				
Dose calculation.	A	A&B	-	A-D
Section 13: Radiation protection:	B	A&B	-	A-D
Background radiation	B	A&B	-	A-D
Dose equivalent	B	A&B	-	A-D
Protective barriers	B	A&B	-	A-D
Protection against scattered & leakage radiation. Protection against sealed sources	B	A&B	-	A-D
Protection against unsealed sources.	B	A&B	-	A-D
Radiation survey.	B	A&B	-	A-D
Personal area and environmental monitoring.	B	A&B	-	A-D
Waste disposal.	B	A&B	-	A-D
Storage and transfer of isotopes.		A&B	-	A-D
Protective regulation in RT.	B	A&B	-	A-D
Maximum allowable doses.	B	A&B	-	A-D
Risk estimates national and international regulations and license.	B	A&B	-	A-D

5. Methods of teaching/learning:

- Didactic (lectures, seminars, tutorial)
- Observation and supervision
- Written & oral communication
- Senior staff experience

6. Methods of teaching/learning: for students with poor achievements

Extra didactic (lectures, seminars, tutorial)

7. Assessment methods:

I. Assessment tools:

1. Written and oral exam
2. Log book

ii. **Time schedule:** After 12 months from applying to the M D degree.

iii. **Marks: 75**

8. List of references

i. Lectures notes

- Course notes
- Staff members print out of lectures and/or CD copies

ii. Essential books

-**The Physics of Radiation Therapy.** Faiz Khan. Publisher: Williams and Wilkins. Baltimore, 2003 (3rd edition)

iii. Recommended books

iv. Periodicals, Web sites, ... etc

- **Periodicals:**
- **Web sites:**
 - ✓ www.NCCN.com
 - ✓ www.asco.org
 - ✓ www.uicc.org
 - ✓ www.EORTC.org
 - ✓ www.medscape.com
 - ✓ www.cancer.gov/
 - ✓ <http://annonc.oxfordjournals.org/>
 - ✓ www.redjournal.org/

v. others : None

Course 4 Clinical Oncology 1 Unit 2 (Radiobiology)










Name of department: Clinical oncology

Faculty of medicine

Assiut University

2016-2017

1. Unit data

-  **Unit Title:** Radiobiology
-  **Unit code:** ONM327A§
-  **Speciality** Clinical Oncology
-  **Number of credit point:** 1.5 credit point, didactic 1.5 credit point (100%)
-  **Department (s) delivering the unit:** Clinical Oncology Department,
-  **Coordinator (s):**
 - **Course coordinator:** Staff members of Clinical Oncology, Assiut University as annually approved by department council
 - **Assistant coordinator (s)** Staff members of Clinical Oncology, Assiut University as annually approved by department council
-  **Date last reviewed:** September 2017
-  **General requirements (prerequisites) if any :**
None
-  **Requirements from the students to achieve unit ILOs are clarified in the joining log book.**

2. Unit Aims

The student should acquire the details facts of Radiobiology including cellular biology ; laws and principles of radiation biology ,electromagnetic and particulate radiations to cellular interactions; units of radiation quantities and radiobiological measures ; correct usage somatic and genetic effects of radiation.

3. Unit intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	<i>Methods of Evaluation</i>
<u>A. Demonstrate details of</u> <ul style="list-style-type: none"> ✚ Normal cell morphology & physiology. ✚ DNA strand breaks and chromosomal aberrations. ✚ Cell survival curve. ✚ Cell, Tissue, and tumor Kinetics. ✚ Radiosensitivity and cell age in mitotic cycle. ✚ Repair of radiation damage and dose-rate effect. ✚ Oxygen effect and Reoxygenation. ✚ Linear Energy Transfer and Relative Biologic Effectiveness. ✚ Acute Effects of Total-Body Irradiation. ✚ Radioprotectors. ✚ Radiation Carcinogenesis. ✚ Hereditary Effects of Radiation. ✚ Effects of radiation on the embryo and fetus. ✚ Radiation protection. ✚ Molecular techniques in radiobiology. 	Didactic (lectures, seminars, tutorial)	- Written and oral examination - Log book

<ul style="list-style-type: none"> + Cancer Biology. + Time dose and fractionation in radiotherapy. + Alternative radiation Modalities. + Radiosensitizers and Bioreductive drugs. + Gene therapy. + Interaction of Radiation and chemotherapeutic agents. + Hyperthermia. 		
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B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Apply the basic (Radiobiology) supportive sciences which are appropriate to Clinical Oncology related problems.	-Didactic (lectures, seminars, tutorial)	-Written and oral examination - Log book
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to tumor Radiobiology.		
C. Design and present cases, seminars in common problems related to Radiobiology.		
D. Formulate management plans and alternative decisions in different situations in the field of the Radiobiology.		

C- Practical skills

Practical = 0 credit point

D. General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ Learning	Methods of Evaluation
A. Use information technology to manage information, access on-line medical information; and support their own education.	-Observation and supervision -Written & oral communication	- Oral Exam - Logbook

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Write a report in the conditions mentioned in A.A &A.B	-Observation and supervision -Written & oral communication	- Oral Exam - Logbook - Check list

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
C. Demonstrate a commitment to ethical principles.	-Observation -Senior staff experience	- Oral Exam - Logbook

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
D. Work effectively in relevant health care delivery settings and systems.	-Observation -Senior staff experience	-360o global rating

4. Unit contents (topic s/modules/rotation Course (Unit)Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge	Intellectual	Practical skills	General Skills
	A	B	C	D
Normal cell morphology & physiology	A	A	-	A-D
DNA strand breaks and chromosomal aberrations	A	A	-	A-D
Cell survival curve.	A	A	-	A-D
Cell, Tissue, and tumor Kinetics.	A	A-D	-	A-D
Radiosensitivity and cell age in mitotic cycle.	A	A-D	-	A-D
Repair of radiation damage and dose-rate effect.	A	A-D	-	A-D
Oxygen effect and Reoxygenation.	A	A-D	-	A-D
Linear Energy Transfer and Relative Biologic Effectiveness.	A	A	-	A-D
Acute Effects of Total-Body Irradiation	A	A-D	-	A-D
Radioprotectors.	A	A-D	-	A-D
Radiation Carcinogenesis	A	A-D	-	A-D
Hereditary Effects of Radiation	A	A	-	A-D
Effects of radiation on the embryo and fetus	A	A	-	A-D
Radiation protection	A	A-D	-	A-D
Molecular techniques in radiobiology	A	A-D	-	A-D

Cancer Biology	A	A-D	-	A-D
Time dose and fractionation in radiotherapy	A	A-D	-	A-D
Alternative radiation Modalities.	A	A-D	-	A-D
Radiosensitizers and Bioreductive drugs	A	A-D	-	A-D
Gene therapy.	A	A-D	-	A-D
Interaction of Radiation and chemotherapeutic agents.	A	A-D	-	A-D
Hyperthermia	A	A-D	-	A-D

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5. Unit methods of teaching/learning:

- Didactic (lectures, seminars, tutorial)
- Observation and supervision
- Written & oral communication
- Senior staff experience

6. Unit methods of teaching/learning: for students with poor achievements

- Extra didactic (lectures, seminars, tutorial)

7. Unit assessment methods:

. Assessment tools:

1. Written and oral exam
2. Log book

ii. **Time schedule:** After 12 months from applying to the M D degree.

iii. **Marks: 75**

8. List of references

i. Lectures notes

Staff members print out of lectures

ii. Essential books

- Radiobiology for the Radiologist, 6 th edition: Eric Hall
- The Basic Science of Oncology, 4 th edition: Tannock, Hill, Bristow & Harrington.

iii. Recommended books

- none

iv. Periodicals, Web sites, ... etc

- ✓ www.NCCN.com
- ✓ www.asco.org
- ✓ www.uicc.org
- ✓ www.EORTC.org
- ✓ www.medscape.com
- ✓ www.cancer.gov/
- ✓ <http://annonc.oxfordjournals.org/>
- ✓ www.redjournal.org/

v. Others: none

9. Signatures











Course Coordinator	
Head of the Department:	Unit 1 Coordinator:
Date:	Date:
Head of the Department:	Unit 2 Coordinator:
Date:	Date:

Course 5 Internal Medicine and General Surgery

Course 5 Unit 1 Internal Medicine

Name of department: of Clinical Oncology
Faculty of medicine
Assiut University
2016-2017

1. Unit data

-  **Unit Title: Internal Medicine**
-  **Unit code: ONM327B#**
-  **Speciality is Clinical Oncology**
-  **Number of credit points: 1 credit point for didactic(100%)**
-  **Department (s) delivering the Unit : Department of Internal Medicine in conjunction with Department of Clinical Oncology - Faculty of Medicine- Assiut- EGYPT**
-  **Coordinator (s): Staff members of Internal Medicine Department in conjunction with Clinical Oncology Department as annually approved by both departments councils**
-  **Date last reviewed: September 2017**
-  **Requirements (prerequisites) if any :**
 -  **None**
-  **Requirements from the students to achieve Unit ILOs are clarified in the joining log book.**

2. Unit Aims

- To make the students able to be familiar with the diagnosis and management of common medical problems that may be encountered with Clinical Oncology

3. Unit intended learning outcomes (ILOs):

A-Knowledge and understanding

ILOs	Methods of teaching/learning	<i>Methods of Evaluation</i>
<p>A. Explain update and evidence based etiology, clinical picture, diagnosis and management of the following common diseases and clinical conditions of Internal Medicine in subjects related to clinical oncology:</p> <ul style="list-style-type: none"> • Thyroid • Parathyroid • Pituitary • Renal • Heart • Respiratory system • GIT 	-Didactic (lectures, seminars, tutorial)	-Written and oral examination - Logbook
<p>B. Mention the principles of</p> <p><input checked="" type="checkbox"/> <u>Thyroid</u></p> <ul style="list-style-type: none"> • Hypothyroidism • Hyperthyroidism • Thyroiditis • Thyroid malignancies <p><input checked="" type="checkbox"/> <u>Parathyroid</u></p> <ul style="list-style-type: none"> • Hyperparathyroidism • Suprarenal • Cushing 		

<ul style="list-style-type: none"> • Addison's • Pheochromocytoma ☒ <u>Pituitary</u> • Hypopituitarism • Acromegaly • Gigantism ☒ <u>Renal:</u> • Acute and Chronic renal failure • Glomerulonephritis • Pyelonephritis ☒ <u>Heart</u> • CAD • Angina • Infarction • Cardiomyopathy ☒ <u>Respiratory system</u> • Pulmonary embolism • Bronchogenic Ca ☒ <u>GIT:</u> • Liver cirrhosis • Jaundice • Causes of hepatosplenomegaly 		
C. Explain the facts and principles of the relevant basic supportive sciences related to Internal Medicine.		
D. Explain the facts and principles of the relevant clinically supportive sciences related to Internal Medicine.		
E. Describe the basic ethical and medicolegal principles relevant to the Internal Medicine.		
F. Describe the basics of quality assurance to ensure good clinical care in Internal Medicine.		
G. Explain the ethical and scientific principles of medical research		
H. Explain the impact of common health problems in the field of Internal Medicine on the society.		

B-Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Design / present case in common problem related to Clinical Oncology	-Didactic (lectures, seminars, tutorial)	-Written and oral examination - Logbook
B. Apply the basic and clinically supportive sciences which are appropriate to the speciality related conditions/problem/ topics.		
C. Demonstrate an investigatory and analytic thinking “problem – solving “approaches to clinical situation related to Internal Medicine.		
D. Formulate management plans and alternative decisions in different situations in the field of Internal Medicine.		

C-Practical skills (Patient Care)

Practical = 0 credit point

D-General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Use information technology to manage information, access on-line medical information; and support their own education	-Observation and supervision -Written and oral communication	Oral exam Logbook

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Write a report in common condition mentioned in A.A, A.B	-Clinical round -Seminars -Lectures	-Log book -Chick list Oral exam

Professionalism

ILOs	Methods of teaching/ Learning	Methods of Evaluation
C. Demonstrate a commitment to ethical principles.	- Observation and supervision Written & oral communication	-Log book Oralexam

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
D. Work effectively in different health care delivery settings and systems.	-Observation -Senior staff experience	-360o global rating

**4. Unit contents (topic s/modules/rotation
Course (Unit 3)Matrix**

Time Schedule: First part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skills C	General Skills D
• Hypothyroidism	A-H	A-D	-	A-D
• Hyperthyroidism	A-H	A-D	-	A-D
• Thyroiditis	A-H	A-D	-	A-D
• Thyroid malignancies	A-H	A-D	-	A-D
• Hyperparathyroidism	A-H	A-D	-	A-D
• Suprarenal	A-H	A-D	-	A-D
• Cushing	A-H	A-D	-	A-D
• Addison's	A-H	A-D	-	A-D
• Pheochromocytoma	A-H	A-D	-	A-D
• Hypopituitarism	A-H	A-D	-	A-D
• Acromegaly	A-H	A-D	-	A-D
• Gigantism	A-H	A-D	-	A-D
• Acute and Chronic renal failure	A-H	A-D	-	A-D
• Glomerulonephritis	A-H	A-D	-	A-D
• Pyelonephritis	A-H	A-D	-	A-D
• CAD	A-H	A-D	-	A-D
• Angina	A-H	A-D	-	A-D
• Infarction	A-H	A-D	-	A-D
• Cardiomyopathy	A-H	A-D	-	A-D
• Pulmonary embolism	A-H	A-D	-	A-D
• Bronchogenic Ca	A-H	A-D	-	A-D
• Liver cirrhosis	A-H	A-D	-	A-D
• Jaundice	A-H	A-D	-	A-D
• Causes of hepatosplenomegaly	A-H	A-D	-	A-D

4. Unit Methods of teaching/learning:

5. Didactic (lectures, seminars, tutorial)
6. Observation and supervision
7. Written & oral communication
8. Senior staff experience

6. Unit Methods of teaching/learning: for students with poor achievements

1. Extra Didactic (lectures, seminars, tutorial) according to their needs

7. Unit assessment methods:

i. Assessment tools:

- Written & oral, examination
- Check list & Log book

ii. Time schedule: After 12 months from applying to the M D degree

iii. Marks: 50 marks

8. List of references

i. Lectures notes

- Course notes
- Staff members print out of lectures and/or CD copies

ii. Essential books

- Davidson's Principles and Practice of Medicine by Nicki R. Colledge, Brian R. Walker, and Stuart H. Ralston on March, 2010

iii. Recommended books

- Harrison's Principles of Internal Medicine by Anthony Fauci, Eugene Braunwald, Dennis Kasper, and Stephen Hauser, 17th Edition, March 2008.

iv. Periodicals, Web sites, ... etc

- Internal medicine journal
- Annals of Internal medicine journal
- *Internal medicine*
- Journal of General Internal Medicine

iv. others : None

Course 5 Unit 2 General Surgery

Name of department: of Clinical Oncology
Faculty of medicine
Assiut University
2016-2017

1. Unit data

- + Unit Title: General Surgery
- + Unit code: ONM327B#
- + Speciality is Clinical Oncology
- + Number of credit points: 1 credit point for didactic(100%)
- + Department (s) delivering the unit: Department of General Surgery in conjunction with Department of Clinical Oncology - Faculty of Medicine- Assiut- EGYPT
- + Coordinator (s):): Staff members of General Surgery Department in conjunction with Clinical Oncology Department as annually approved by both departments councils
- + Date last reviewed: September 2017
- + Requirements (prerequisites) if any :
 - None
- + Requirements from the students to achieve unit ILOs are clarified in the joining log book.

2. Unit Aims

The student should acquire the basic Knowledge, clinical and surgical skills related to Clinical Oncology in clinical reasoning, diagnosis and management of diseases of clinical Oncology

3. Unit intended learning outcomes (ILOs):

A-Knowledge and understanding

ILOs	Methods of teaching/ learning	<i>Methods of Evaluation</i>
<p>A. Explain update and evidence based etiology, clinical picture, diagnosis and management of the following common diseases and clinical conditions of general surgery in subjects related to clinical oncology:</p> <ul style="list-style-type: none"> ● Breast cancer ● Benign and malignant thyroid tumors ● Abdominal Swellings ● Colorectal Cancer ● Jaundice ● Testicular Tumors ● Tongue Cancer ● Lymphadenopathy 	-Didactic (lectures, seminars, tutorial)	-Written and oral examination - Logbook
<p>B. Mention the principles of</p> <p><input checked="" type="checkbox"/> <u>Surgical Oncology</u></p> <ul style="list-style-type: none"> ● Preoperative evaluation ● Surgery for specific types and sites ● Biopsy techniques <ul style="list-style-type: none"> a. Fine-needle aspiration b. Core, excision c. Needle localization biopsy 		
<p>C. Mention basics of the following rare diseases and conditions</p>		

<input checked="" type="checkbox"/> <u>Breast Cancer</u> <ul style="list-style-type: none"> • Male breast cancer • Breast cancer in pregnancy • Breast cancer in elderly women • Breast cancer in very young women • Breast cancer presenting as axillary metastases • Phyllodes tumors • Paget's disease of the nipple 		
D. Explain the facts and principles of the relevant basic supportive sciences related to General Surgery.		
E. Explain the facts and principles of the relevant clinically supportive sciences related to General Surgery.		
F. Describe the basic ethical and medicolegal principles relevant to the General Surgery.		
G. Describe the basics and measurements of quality assurance to ensure good clinical care in General Surgery		
H. Explain the ethical and scientific principles of medical research		
I. Explain the impact of common health problems in the field of General Surgery on the society.		

B-Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Design and present case in common problem related to General Surgery	-Didactic (lectures, seminars, tutorial)	-Written and oral examination - Logbook
B. Apply the basic and clinically supportive sciences which are appropriate to the speciality		

related conditions / problem / topics.		
C. Demonstrate an investigatory and analytic thinking “problem – solving “approaches to clinical situation related to General Surgery		
D. Formulate management plans and alternative decisions in different situations in the field of General Surgery		

C-Practical skills (Patient Care)
Practical = 0 credit point

D-General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Use information technology to manage information, access on-line medical information; and support their own education	-Observation and supervision -Written and oral communication	Oral exam Logbook

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Write a report in common condition mentioned in A.A, A.B	-Clinical round -Seminars -Lectures	-Log book -Chick list Oral exam

Professionalism

ILOs	Methods of teaching/ Learning	Methods of Evaluation
C. Demonstrate a commitment to ethical principles.	- Observation and supervision Written & oral communication	-Log book Oralexam

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
D. Work effectively in different health care delivery settings and systems.	-Observation -Senior staff experience	-360o global rating

**4. Course contents (topic s/modules/rotation
Course (Unit 2) Matrix**

Time Schedule: Firstpart

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skills C	General Skills D
• Breast Cancer	A-I	A-D	-	A-D
• Benign and malignant thyroid tumors	A, B,D-I	A-D	-	A-D
• Abdominal swelling	A, B,D-I	A-D	-	A-D
• Colorectal cancer	A, B,D-I	A-D	-	A-D
• Jaundice	A, B,D-I	A-D	-	A-D
• Testicular tumors	A, B,D-I	A-D	-	A-D
• Tongue cancer	A, B,D-I	A-D	-	A-D
• Lymphadenopathy	A, B,D-I	A-D	-	A-D
• Surgical oncology	B-I	A-D	-	A-D
• Preoperative evaluation	B-I	A-D	-	A-D
• Surgery for specific types and sites	B-I	A-D	-	A-D
• Biopsy techniques	B-I	A-D	-	A-D
• Preoperative evaluation	B-I	A-D	-	A-D
• Surgery for specific types and sites	B-I	A-D	-	A-D
• Biopsy techniques	B-I	A-D	-	A-D
• Male breast cancer	C-H	A-D	-	A-D
• Breast cancer in pregnancy	C-H	A-D	-	A-D
• Breast cancer in elderly women	C-H	A-D	-	A-D
• Breast cancer in very young women	C-H	A-D	-	A-D

• Breast cancer presenting as axillary metastases	C-H	A-D	-	A-D
• Phyllodes tumors	C-H	A-D	-	A-D
• Paget's disease of the nipple	C-H	A-D	-	A-D

9. Unit Methods of teaching/learning:

1. Didactic (lectures, seminars, tutorial)
2. Observation and supervision
3. Written & oral communication
4. Senior staff experience

6. Unit Methods of teaching/learning: for students with poor achievements

1. Extra Didactic (lectures, seminars, tutorial) according to their needs

7. Unit assessment methods:

i. Assessment tools:

- Written
- Oral examination
- Check list
- Log book

ii. Time schedule: After 12 months from applying to the M D degree

iii. Marks: 50 marks

8. List of references

i. Lectures notes

- Course notes
- Staff members print out of lectures and/or CD copies

ii. Essential books

- Bailey and Love's Short Practice of Surgery [23rd Edition] by Hamilton Bailey, R.J. McNeill Love, R.C.G. Russell, and etc. (2000)
- Principles and Practice of Surgical Oncology: A Multidisciplinary Approach to Difficult Problems by

Howard Silberman and Allan W. Silberman, Sep 23,
2009

iii. Recommended books

- Sabiston textbook of surgery 18th Edition

iv. Periodicals, Web sites, ... etc

- Surgical clinics of North America
- Journal of General Surgery

v. others : None






9. Signatures	
Course Coordinator	
Head of the Department:	Unit 1 Coordinator:
Date:	Date:
Head of the Department:	Unit 2 Coordinator:
Date:	Date:


Course 6: Unit 1: Pharmacology and Oncopathology




Course 6: Unit 1: Pharmacology

Name of department: of Clinical Oncology
Faculty of medicine
Assiut University
2016-2017

1. Unit data

-  **Unit Title:** Pharmacology
-  **Unit code:** ONM327C#
-  **Speciality** Clinical Oncology
-  **Number of credit points:** 1 credit point for didactic (100%)
-  **Department (s) delivering the Unit:** Department of Pharmacology in conjunction with Department of Clinical Oncology - Faculty of Medicine- Assiut- EGYPT

-  **Coordinator (s):**Staff members of Department of Pharmacology in conjunction with Department of Clinical Oncology department as annually approved by both departments councils

-  **Date last reviewed:** September 2017
-  **Requirements (prerequisites) if any :**
 - None
-  **Requirements from the students to achieve unit ILOs are clarified in the joining log book.**

2. Unit Aims

To acquire in depth the Pharmacological background necessary for Clinical Oncology in clinical reasoning, diagnosis and management of Clinical Oncology.

3. Unit intended learning outcomes (ILOs):

A-Knowledge and understanding

ILOs	Methods of teaching/ learning	<i>Methods of Evaluation</i>
A. Mention Principles of General Pharmacology Pharmacokinetics Pharmacodynamics	-Didactic (lectures, seminars, tutorial)	- Written and oral examination - Logbook
B. Describe Pharmacological details of: Cancer chemotherapy Antiemetic drugs Antidiarrheal drugs Diuretics Anticonvulsants Steroid drugs and nonsteroidal anti-inflammatory drugs Immunosuppressive drugs Hormonal agents used in the treatment of cancer Drugs used in the treatment of metabolic disorders, shock, hemorrhage and anemia		

A- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Apply the basic (Pharmacological) supportive sciences which are appropriate to Clinical Oncology related problems.	-Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to Clinical Oncology.		

C. Practical skills

Practical: 0 creditpoint

B- General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Use information technology to manage information, access on-line medical information; and support their own education	-Observation and supervision -Written and oral communication	Oral exam Logbook

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Write a report in common condition mentioned in A.A, A.B	-Clinical round -Seminars -Lectures	-Log book -Chick list Oral exam

Professionalism

ILOs	Methods of teaching/ Learning	Methods of Evaluation
C. Demonstrate a commitment to ethical principles.	- Observation and supervision Written & oral communication	-Log book Oralexam

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
D. Work effectively in different healthcare delivery settings and systems.	-Observation -Senior staff experience	-360o global rating

4. Unit contents (topic s/modules/rotation Course (Unit 2) Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skills C	General Skills D
Pharmacokinetics	A	A.B	-	A-D
Pharmacodynamics	A	A.B	-	A-D
Cancer chemotherapy	A	A.B	-	A-D
Antiemetic drugs	A	A.B	-	A-D
Antidiarrheal drugs	A	A.B	-	A-D
Diuretics	A	A.B	-	A-D
Anticonvulsants	A	A.B	-	A-D
Steroid drugs and nonsteroidal anti-inflammatory drugs	B	A.B	-	A-D
Immunosuppressive drugs	B	A.B	-	A-D
Hormonal agents used in the treatment of cancer	B	A.B	-	A-D
Drugs used in the treatment of metabolic disorders	B	A.B	-	A-D
Drugs used in the treatment of shock	B	A.B	-	A-D
Drugs used in the treatment of hemorrhage	B	A.B	-	A-D
Drugs used in the treatment of anemia	B	A.B	-	A-D

5. Unit methods of teaching/learning:

1. Didactic (lectures, seminars, tutorial)
2. Observation and supervision
3. Written & oral communication
4. Senior staff experience

6. Unit methods of teaching/learning: for students with poor achievements

1. Extra didactic (lectures, seminars, tutorial)

7. Unit assessment methods:

i. Assessment tools:

1. Written and oral examination
2. Log book

ii. **Time schedule:** After 12 months from applying to the M D degree.

iii. **Marks:** 50

8. List of references

i. Lectures notes

- Course notes
- Staff members print out of lectures and/or CD copies

ii. Essential books

- Basic & Clinical Pharmacology, 11th Edition. By Bertram Katzung, Anthony Trevor, Susan Masters. Publisher: McGraw-Hill

iii. Recommended books

- Godman Gilman's. The pharmacological therapeutics. 11th Ed

iv. Periodicals, Web sites, ... etc

➤ Periodicals,

- British journal of pharmacology
- Pharmacological review

➤ **Web sites:** <http://mic.sgmjournals.org/>

vi. others : None

Course 6 Unit 2 Oncopathology

Name of department: of Clinical Oncology
Faculty of medicine
Assiut University
2016-2017

1. Unit data

- + Unit Title: Pathology
- + Unit code: ONM327C#
- + Speciality Clinical Oncology
- + Number of credit points: 1 credit point for didactic (100%)
- + Department (s) delivering the unit: Department of Pathology in conjunction with Department of Clinical Oncology - Faculty of Medicine- Assiut- EGYPT
- + Coordinator (s): Staff members of Pathology Department in conjunction with Clinical Oncology Department as annually approved by both departments councils
- + Date last reviewed: September 2017
- + Requirements (prerequisites) if any :
 - + None
- + Requirements from the students to achieve unit ILOs are clarified in the joining log book.

2. Unit Aims

The student should acquire the pathological facts necessary for Clinical Oncology

3. Unit intended learning outcomes (ILOs):

B- Knowledge and understanding

ILOs	Methods of teaching/ learning	<i>Methods of Evaluation</i>
<p>A. Mention Principles of General Pathology</p> <p><input checked="" type="checkbox"/> <u>General pathology:</u></p> <ul style="list-style-type: none"> ● Inflammatory reactions ● Gangrene ● Necrosis ● carcinogenesis 	-Lectures	<p>-Written and oral examination</p> <p>- Log book</p>
<p>B. Describe Pathological details of:</p> <p><input checked="" type="checkbox"/> <u>Tumor pathology:</u></p> <ul style="list-style-type: none"> ● Etiology ● Epidemiology ● incidence. ● A brief morphology of common tumors (macro & micro) ● grading & differentiation of tumors. ● Natural history, growth characteristics and tumor spread. ● Staging systems classification i.e. TNM, FIGO. <p><input checked="" type="checkbox"/> Use of specialized pathology techniques e.g. immunohistochemistry, phenotyping, Cluster of differentiation (CD) classifications, FISH, CISH, microarray & geneprint.</p> <p><input checked="" type="checkbox"/> <u>Breast Cancer</u></p> <ul style="list-style-type: none"> ● Phyllodes tumors ● Paget's disease of the nipple 		

C- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Apply the basic (Pathological I) supportive sciences which are appropriate to Clinical Oncology related problems.	-Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to Clinical Oncology.		

C. Practical skills

Practical: 0 creditpoint

D. General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Use information technology to manage information, access on-line medical information; and support their own education	-Observation and supervision -Written and oral communication	Oral exam Logbook

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Write a report in common condition mentioned in A.A, A.B	-Clinical round -Seminars -Lectures	-Log book -Chick list Oral exam

Professionalism

ILOs	Methods of teaching/ Learning	Methods of Evaluation
C. Demonstrate a commitment to ethical principles.	- Observation and supervision Written & oral communication	-Log book Oralexam

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
D. Work effectively in different healthcare delivery settings and systems.	-Observation -Senior staff experience	-360o global rating

4. Unit contents (topic s/modules/rotation Course (Unit 4) Matrix

Time Schedule: First part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skills C	General Skills D
• Inflammatory reactions	A	A	-	A-D
• Gangrene	A	A	-	A-D
• Necrosis	A	A	-	A-D
• carcinogenesis	A	A	-	A-D
• Etiology	B	A	-	A-D
• Epidemiology	B	A	-	A-D
• incidence.	B	A	-	A-D
• A brief morphology of common tumors (macro & micro)	B	A	-	A-D
• grading & differentiation of tumors.	B	A	-	A-D
• Natural history, growth characteristics and tumor spread.	B	A	-	A-D
• Staging systems classification i.e. TNM, FIGO.	B	A	-	A-D
• Use of specialized pathology techniques e.g. immunohistochemistry, phenotyping, Cluster of differentiation (CD) classifications, FISH, CISH, microarray & geneprint.	B	A&B	-	A-D
• Phyllodes tumors	B	A	-	A-D
• Paget's disease of the nipple	B	A	-	A-D

1. 5. Methods of teaching/learning:-

2. Didactic (lectures, seminars, tutorial
3. Observation and supervision
4. Written & oral communication
5. Senior staff experience

6. Methods of teaching/learning: for students with poor achievements

1. Extra Didactic (lectures, seminars, tutorial) according to their needs

7. Assessment methods:

i. Assessment tools:

1. oral examination
2. Written examination
3. Log book

ii. Time schedule: 12 months from applying to the M D degree.

iii. Marks: 50 marks

8. List of references

i. Lectures notes

- Course notes
- Staff members print out of lectures and/or CD copies

ii. Essential books

- Essentials of Rubin's Pathology by Raphael Rubin et. al., Second edition (October 1, 2010)

iii. Recommended books

- General Pathology of Cancer by El-Bolkainy et al., second edition, 2005.
- Topographic Pathology of Cancer by El-Bolkainy et al., second edition, 2005.

9. Signatures

Course Coordinator	
Head of the Department:	Unit 1 Coordinator:
Date:	Date:
Head of the Department:	Unit 2 Coordinator:
Date:	Date:

Second Part

Course 7 Clinical Oncology










Name of department: of Clinical Oncology

Faculty of medicine

Assiut University

2016-2017

1. Course data

-  **Course Title:** Clinical Oncology
-  **Course ode:** ONM327D
-  **Speciality is** Clinical Oncology
-  **Number of credit points:** 147 credit point - didactic 24 credit point (16.3%) - practical 123 credit point (83.7%)
-  **Department (s) delivering the course:** Department of Clinical Oncology - Faculty of Medicine- Assiut- EGYPT
-  **Coordinator (s):**
 - **Unit coordinator:** Prof. Samir Shehata
 - Assistant coordinator (s)** Dr. HananGamal
-  **Date last reviewed:** September 2017
-  **Requirements (prerequisites) if any :**
 - None
-  **Requirements from the students to achieve course ILOs are clarified in the joining log book.**

2. Course Aims

1. Enable MD students to master high level of clinical skills, in addition to update and advanced medical knowledge, integration and interpretation of different investigations, professional competence in the area of Clinical Oncology related disorders.
2. Provide candidates with enough general skills related to Clinical Oncology including, writing specialized medical reports, use of information technology in clinical decisions and research, teaching juniors and counseling patients and their families about Clinical Oncology related conditions.

3. Course intended learning outcomes (ILOs):

A-Knowledge and understanding

ILOs	Methods of teaching/ learning	<i>Methods of Evaluation</i>
<p>B. Explain update and evidence based etiology, clinical picture, diagnosis and management of the following common diseases and clinical conditions:</p> <ul style="list-style-type: none"> ● Breast cancer ● Gastrointestinal cancers ● Genitourinary cancers ● Gynecological cancers ● Hematological malignancy ● Head and neck cancers ● Thoracic tumors ● Sarcoma and skin tumors ● Pediatric malignancy ● Oncological emergency 	<p>-Lecture -Self-directed learning -Case-based studies with discussion and problem solving.</p>	<p>-OSCE at the end of each year -log book & portfolio - One MCQ examination at the second half of the second year and another one in the third year -Written and oral examination</p>

<p>B. Mention the principles of (diagnostic/therapeutic/preventive tools)</p> <p>☒ <u>Imaging/staging techniques in diagnosis, staging, and follow-up</u></p> <ul style="list-style-type: none"> • Radiographic • Computed tomography (CT) • Ultrasound • Magnetic resonance imaging (MRI) • Positron emission tomography (PET) • Endoscopic imaging techniques <p>☒ <u>Surgical Oncology</u></p> <ul style="list-style-type: none"> • Preoperative evaluation • Surgery for specific types and sites • Biopsy techniques <ul style="list-style-type: none"> a. Fine-needle aspiration b. Core, excision c. Needle localization biopsy <p>☒ <u>Radiation Oncology</u></p> <ul style="list-style-type: none"> • Principles of radiation biology • Normal tissue tolerance and toxicity • Interactions <ul style="list-style-type: none"> a. Chemotherapy b. Hormone therapy c. Biologic therapy d. Sequencing of therapy • Fractionation and dosing • Hyperthermia • Electron beam therapy • Brachytherapy • Focused radiation therapies <ul style="list-style-type: none"> a. 3-DCRth b. Gamma knife c. Stereotactic radiotherapy d. Intensity-modulated radiation therapy (IMRT) e. Cyberknife 	<p>-Lecture</p> <p>-Self-directed learning</p> <p>-Case-based studies with discussion and problem solving.</p>	<p>-OSCE at the end of each year</p> <p>-logbook & portfolio</p> <p>- One MCQ examination at the second half of the second year and another one in the third year</p> <p>-Written and oral examination</p>
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f. Image Guided Radiotherapy (IGRT)

☒ **Chemotherapy**

- Indications and goals
 - a. Primary cancer
 - b. Recurrent cancer
- Pharmacology
 - a. Pharmacokinetics
 - b. Pharmacodynamics
 - c. Metabolism and clearance
 - d. Pharmacogenomics
- e. List of drugs
- Dose and schedule
 - a. Metronomic
 - b. Dose-density
 - c. Dose-intensity
 - d. High-dose
- Cancer drug development and testing
- Drug resistance
- Predicting response and toxicity

☒ **Hormonal Therapies**

- Estrogens
- Selective estrogen response modifiers
- Progestins and antiproggestins
- Aromatase inhibitors
- Androgens and antiandrogens
- Gonadotropin-releasing hormone analogs
- Glucocorticoids
- Miscellaneous agents

☒ **Biologic/Targeted Therapy**

- Basic concepts of targeted molecular therapies
- Monoclonal antibodies
- Tumor vaccines
- Cellular therapy
- Antiangiogenic agents
- Cytokines

<ul style="list-style-type: none"> • Gene-directed therapy ☒ <u>Cancer prevention</u> <ul style="list-style-type: none"> • Lifestyle changes • Chemoprevention • Surgical role ☒ <u>Cancer Screening</u> ☒ <u>Breast cancer</u> <ul style="list-style-type: none"> • Epidemiologic and etiologic risk factors, tumor markers/molecular genetics for breast cancer. • Natural history, typical clinical presentations and diagnostic work-up, staging, clinico-pathologic manifestations and prognostic factors of breast cancer. • Principles of multidisciplinary treatment and management for early stage breast cancer, including: <ul style="list-style-type: none"> ❖ Ductal carcinoma in-situ (DCIS) ❖ Early stage invasive carcinoma ❖ The role of radiation therapy and systemic therapy in breast conservation therapy (BCT) for early stage breast cancer (DCIS and invasive) ❖ Surgical techniques: breast conserving surgery; axillary dissection; sentinel node biopsy ❖ Selection factors and contra-indications to BCT ❖ Appropriate management of lymph node regions • Principles of multidisciplinary management and treatment of: <ul style="list-style-type: none"> ❖ Locally advanced breast cancer ❖ Inflammatory breast cancer ❖ Types/use of systemic therapy (chemotherapy, hormonal therapy) ❖ Role of radiation therapy (post-mastectomy) 		
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<ul style="list-style-type: none"> • Radiation effects of the breast and surrounding normal tissue. • Expected therapeutic outcomes of treatments, including expected control rates. • Supportive care and follow up <p>☒ <u>Gastrointestinal cancer</u></p> <ul style="list-style-type: none"> • Epidemiologic and etiologic risk factors, tumor markers/molecular genetics, potential preventative and screening methods. • Natural history, typical clinical presentations, diagnostic workup and staging, clinico-pathologic manifestations and prognostic factors of GIT cancer. • Principles of multidisciplinary treatment and management and role(s) of radiation therapy for each of the disease sites and categories, including: <ul style="list-style-type: none"> + Types/use of systemic therapy (chemotherapy, targeted therapy) + Esophageal cancer: <ul style="list-style-type: none"> ❖ Definitive or palliative treatment for distal and proximal esophageal cancer, including surgery, radiation therapy alone, pre-operative and post-operative radiation therapy and chemotherapy and definitive chemoradiation therapy + Pre-operative/post-operative radiation therapy for stomach cancer + Pancreatic cancer: <ul style="list-style-type: none"> ❖ Post-operative radiation therapy/chemotherapy ❖ Chemoradiation for unresectability + Rectal cancer: <ul style="list-style-type: none"> ❖ Adjuvant radiation therapy ❖ Pre-operative/post-operative radiation therapy + Chemoradiation for anal canal cancer 		
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<ul style="list-style-type: none"> • Expected therapeutic outcomes of treatments, including expected control rates. • Principles of treatment of primary site lymph node region for each of the disease categories and stage of disease. • Principles of radiological physics and radiobiology appropriate to radiation therapy for each of the disease categories, including: <ul style="list-style-type: none"> ✚ Importance of time dose factors, including radiotherapy timing in relation to surgery; integration of radiotherapy and systemic therapy. ✚ Isodose distributions for various sized electron fields for different electron beam energies. ✚ Principles of chemoradiation sensitization. • In-depth knowledge of controversial areas or unusual situations in each of the disease categories, including: <ul style="list-style-type: none"> ✚ Adjuvant therapy of colon cancer ✚ Pros and cons of pre-operative and post operative radiation for rectal cancer ✚ Chemoradiation for anal canal cancer. • Radiation effects and response on organ of interest and surrounding normal tissue: acute and chronic radiation effects; complications. <p>☒ <u>Genitourinary Cancer</u></p> <ul style="list-style-type: none"> • Epidemiologic and etiologic risk factors, tumor markers/molecular genetics, including prevention and screening methods. • Natural history, typical clinical presentations, diagnostic workup and staging, clinico-pathologic manifestations and prognostic factors of Genitourinary cancer. • Principles of multidisciplinary treatment and management and role(s) of radiation therapy for of the disease sites/categories, including: <ul style="list-style-type: none"> ✚ Early stage/low risk prostate cancer: role of brachytherapy, external beam therapy, including 3-D CRT and IMRT 		
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- ✚ Intermediate risk and high risk (locally advanced) prostate cancer: role of external beam therapy, including 3-D CRT and IMRT, and/or brachytherapy; adjuvant use of hormonal therapy
- ✚ Post-operative treatment of prostate cancer with radiation: adjuvant vs. salvage radiation +/- hormonal therapy
- ✚ Metastatic prostate cancer: role of radiation and/or hormonal therapy
- ✚ Bladder cancer: definitive radiation; pre-operative and post-operative radiation, role of definitive chemoradiation for invasive carcinoma
- ✚ Testicular cancer: seminoma
- ✚ Renal neoplasms: role of radiation for renal cell carcinoma
- Treatment of primary site and lymph node regions for each of the disease sites and stage of disease.
- Principles of radiological physics and radiobiology as appropriate to radiation therapy for each of the disease categories:
- ✚ Importance of time-dose factors for bladder cancer
- ✚ Principles of radiation sensitization with hormonal therapy (prostate cancer) and chemotherapy (bladder cancer)
- Basic knowledge of areas of controversy in each of the disease categories:
- ✚ Prostate cancer:
 - ❖ Treatment of lymph node region for early stage prostate cancer; locally-advanced, post-operative prostate cancer
 - ❖ Observation for early stage prostate cancer
 - ❖ Hormonal therapy vs. observation vs. salvage for biochemical failure following radiation therapy or brachytherapy
- ✚ Bladder cancer:
 - ❖ Chemoradiation for invasive bladder carcinoma vs. Cystectomy.

<ul style="list-style-type: none"> ❖ Pre/ postoperative radiation therapy ✚ Testis: <ul style="list-style-type: none"> ❖ Surveillance in Stage I carcinoma ❖ Controversies in the determination of treatment volume and dose (para-aortic only vs. hockey-stick) ❖ Issue regarding sterility and second malignant tumor that may be associated with the disease and with radiation treatment. • Radiation effects and response on organ of interest and surrounding normal tissue: acute and chronic radiation effects; complications. ☒ <u>Gynecological Cancer</u> <ul style="list-style-type: none"> • Epidemiologic and etiologic risk factors, tumor markers/molecular genetics. • Natural history, clinical presentation and diagnostic work-up, staging, clinico-pathological manifestation and prognostic factors of gynecologic malignancies. • Principles of multidisciplinary treatment and management for each site and stage: <ul style="list-style-type: none"> ✚ Cervical cancer ✚ Endometrial cancer ✚ Ovarian cancer ✚ Vulval cancer ✚ Vaginal cancer <p>Including the use of chemotherapy, surgery, and other modalities of treatment.</p> <ul style="list-style-type: none"> • Principles of radiological physics and radiobiology appropriate for radiation therapy to each of these sites: <ul style="list-style-type: none"> ✚ Time dose parameters, including treatment duration for cervical cancer ✚ Specific medical knowledge: <ul style="list-style-type: none"> ❖ Cervix: <ul style="list-style-type: none"> ✓ Time-dose parameters (treatment duration) 		
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<ul style="list-style-type: none"> ✓ Use of concomitant chemoradiation ✓ Use of neoadjuvant chemotherapy ✓ Role of post-operative radiation therapy ❖ Endometrial: <ul style="list-style-type: none"> ✓ Indications for pre-operative/post-operative XRT (pelvis and extended field) and brachytherapy ✓ Radiation therapy alone for endometrial cancer ❖ Vulva: <ul style="list-style-type: none"> ✓ Definitive chemoradiation, including inguinal radiation ✓ Indications for post-operative radiation therapy ❖ Vaginal: <ul style="list-style-type: none"> ✓ Use of external beam radiation and brachytherapy ❖ Ovarian: <ul style="list-style-type: none"> ✓ Use of adjuvant chemotherapy ✓ Use of cytoreductive chemotherapy. ❖ Indications for whole abdominal/pelvic radiation post-operatively. • Radiation effects and response on organ of interest and surrounding normal tissue: acute and chronic radiation effects; complications. ☒ <u>Hematological malignancy</u> • Epidemiologic and etiologic risk factors, tumor markers/molecular genetics. • Natural history, clinical presentation and diagnostic work-up, staging, clinico-pathological manifestation and prognostic factors of hematological malignancies. • Principles of multidisciplinary management and treatment and, specifically, the role of chemotherapy and radiation therapy for each of the disease sites and according to disease stage: 🚦 Lymphoma: use of radiation for non-Hodgkin's 		
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lymphoma and Hodgkin's Disease

- + Hodgkin's Disease: appropriate use of irradiation +/- chemotherapy by stage of disease
- + Non-Hodgkin's Lymphoma: use of radiation by stage/extent of disease +/- chemotherapy
- + Multiple myeloma/leukemia: role of radiation therapy for bone marrow transplant or SC transplant. Role of chemotherapy
- + Acute Leukemias (ALL/AML): the use of different chemotherapy schedules according to risk adapted management. Role of BMT
- + Chronic Leukemias (CLL/CML): the use of chemotherapy and targeted therapy according to disease stage and symptoms (observation vs. Active treatment in CLL), the role of BMT
- Principles of treatment of the lymph node region for each of the disease categories by stage of disease.
- Principles of radiological physics and radiobiology appropriate to radiation therapy for each of the disease categories.
- knowledge of controversial areas or unusual situations in each of the disease categories, including those regarding:
- Hodgkin's Disease/Non-Hodgkin's Disease: doses and treatment fields according to each stage of disease
- CNS lymphoma.
- Radiation effects and response on organ of interest and surrounding normal tissue: acute and chronic radiation effects; complications.
- ☒ **Head and neck Cancer**
- Epidemiologic and etiologic risk factors, tumor markers/molecular genetics.
- Natural history, clinical presentation and diagnostic work-up(including ENT endoscopy and laryngoscopy), staging, clinico-pathological

manifestation and prognostic factors of head and neck tumors.

- Principles of multidisciplinary management and treatment and, specifically, the role of chemotherapy and radiation therapy (including brachytherapy, altered fractionation 3-D CRT and IMRT, if appropriate) for each of the disease sites and according to disease stage:

✚ Nasopharynx:

- ❖ Role of chemotherapy and radiation; altered vs. standard fractionation

✚ Nasal cavity/paranasal sinuses:

- ❖ Role of surgery and radiation, including altered fractionation; role of brachytherapy

✚ Salivary glands:

- ❖ Role of surgery and indications for treatment with post-operative radiation

✚ Oral cavity:

- ❖ Indications for treatment with radiation and application of brachytherapy techniques

✚ Tonsillar fossa and faucial arch, oropharynx, including base of tongue:

- ❖ Pre-operative/post-operative and definitive radiation therapy (including hyperfractionation) and use of chemotherapy

✚ Hypopharynx:

- ❖ Use of surgery and/or radiation therapy for each sub-site by stage



✚ Larynx:

- ❖ Use of definitive radiation therapy including altered fractionation and post-operative radiation for each sub-site and stage
- ❖ Chemoradiotherapy for laryngeal preservation
- ❖ Appropriate role of definitive radiation therapy vs. surgery for different disease locations.
- Principles of treatment of primary site and lymph node regions for each of the disease sites

<p>and stage of disease; know indications for treatment for each site and stage of disease.</p> <ul style="list-style-type: none"> • Principles of radiological physics and radiobiology appropriate to radiation therapy for each of the disease categories: <ul style="list-style-type: none"> + Importance of time-dose factors + Repopulation + Principle of chemoradiation sensitization + Principles of hyperfractionation/ altered fractionation + Principles of field alignment; use of electron fields • Radiation effects and response on organ of interest and surrounding normal tissue: acute and chronic radiation effects; complications. <p>☒ Thoracic Cancer</p> <ul style="list-style-type: none"> • Epidemiologic and etiologic risk factors, tumor markers/molecular genetics. • Natural history, clinical presentation and diagnostic work-up(includingrole of bronchoscopy andmediastinoscopy), staging, clinico-pathological manifestation and prognostic factors of thoracic tumors. • Principles of multidisciplinary management and treatment and, specifically, the role of chemotherapy and radiation therapy (including brachytherapy, altered fractionation 3-D CRT and IMRT, if appropriate)for each of the disease sites and according to disease stage: <ul style="list-style-type: none"> + Non-small cell lung cancer: <ul style="list-style-type: none"> ❖ Resectable tumor <ul style="list-style-type: none"> ✓ Role of pre-operative (chemo-) radiation ✓ Role of post-operation radiation ✓ Role of post-operation chemotherapy or chemoradiation ❖ Unrespectable tumors <ul style="list-style-type: none"> ✓ Definitive and palliative radiation and 		
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<p>chemoradiation options, including altered fractionation, hypofractionation and split course.</p> <ul style="list-style-type: none"> ✓ Palliative chemotherapy in advanced disease. <p>❖ Surgery:</p> <ul style="list-style-type: none"> ✓ types of surgery appropriate for lung cancer <p>✚ Small cell lung cancer:</p> <ul style="list-style-type: none"> ❖ Chemoradiation for limited stage disease, sequencing of irradiation and chemotherapy (sequential vs. concurrent) ❖ Elective cranial radiation (pros and cons) ❖ Appropriate role of definitive radiation therapy vs. surgery for different disease locations. <p>✚ Mediastinal tumors (eg. Thymic tumors)</p> <ul style="list-style-type: none"> ❖ Principles of Surgical Resection ❖ Principles of Radiation Therapy ❖ Principles of Chemotherapy ❖ Postoperative radiotherapy or chemoradiotherapy ❖ Unresectable Disease, Definitive and palliative radiotherapy. <p>✚ Pleural Mesothelioma:</p> <ul style="list-style-type: none"> ❖ Role of surgery in resectable disease; Role of adjuvant radio or chemoradiotherapy. ❖ Role of palliative chemotherapy or radiotherapy in irresectable tumors <ul style="list-style-type: none"> ● Principles of treatment of primary site and lymph node regions for each of the disease sites and stage of disease; know indications for treatment for each site and stage of disease. ● Principles of radiological physics and radiobiology appropriate to radiation therapy for each of the disease categories: <p>✚ Importance of time-dose factors</p> <p>✚ Repopulation</p>		
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| <ul style="list-style-type: none"> ✚ Principle of chemoradiation sensitization ✚ Principles of hyperfractionation/altered fractionation ✚ Principles of field alignment; use of electron fields ● Radiation effects and response on organ of interest and surrounding normal tissue: acute and chronic radiation effects; complications. ☒ <u>Sarcoma and skin Cancer</u> ● Epidemiologic and etiologic risk factors, tumor markers/molecular genetics. ● Natural history, clinical presentation and diagnostic work-up(including role of bronchoscopy and mediastinoscopy), staging, clinico-pathological manifestation and prognostic factors of sarcoma and skin cancer. ● Principles of multidisciplinary management and treatment and, specifically, the role of chemotherapy and radiation therapy for each of the disease sites and according to disease stage: ✚ Soft tissue sarcomas, (extremities sarcoma, retroperitoneal sarcoma, gastrointestinal stromal tumors (GIST): <ul style="list-style-type: none"> ❖ Role of postoperative radio/chemoradiotherapy in resectable tumors. ❖ Role of preoperative/definitive radiotherapy in irresectable tumor. Palliative systemic chemotherapy in metastatic disease. ❖ Role of targeted therapy in GIST. ✚ Bone sarcoma (Osteosarcoma, Ewing's sarcoma, chondrosarcoma: <ul style="list-style-type: none"> ❖ role of preoperative and postoperative chemotherapy in resectable tumors. ❖ Role of definitive and palliative radiotherapy in irresectable tumors. ❖ Role of chemotherapy in metastatic disease. ✚ skin cancers: | | |
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<ul style="list-style-type: none"> ❖ Role of adjuvant, palliative and radical radiotherapy in non Melanoma skin cancers(NMSC) ❖ Role and different procedures of sentinel LN biopsy and surgery in MSC. ❖ Systemic treatment in MSC. ● Radiation effects and response on organ of interest and surrounding normal tissue: acute and chronic radiation effects; complications. <p>☒ <u>Pediatric Cancer</u></p> <ul style="list-style-type: none"> ● Epidemiologic and etiologic risk factors, tumor markers/molecular genetics. ● Natural history, clinical presentation and diagnostic work-up(including role of bronchoscopy and mediastinoscopy), staging, clinico-pathological manifestation and prognostic factors of pediatric cancers. ● Principles of multidisciplinary management and treatment and, specifically, the role of chemotherapy and radiation therapy for each of the disease sites and according to disease stage: <p> Childhood CNS:</p> <ul style="list-style-type: none"> ❖ Medulloblastoma (PNET): role of craniospinal irradiation ❖ Ependymoma: role of involved field radiation therapy ❖ Glioma: low grade or high grade intact brain stem ❖ Craniopharyngioma: role of post-operative radiation therapy <p> Childhood solid tumors:</p> <ul style="list-style-type: none"> ❖ Wilms: radiation therapy treatment by stage ❖ Neuroblastoma ❖ Retinoblastoma ❖ Rhabdomyosarcoma: known usual radiation treatment approach by site and disease extent ❖ Lymphoma: use of radiation for non-Hodgkin's 		
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<p>lymphoma and Hodgkin's Disease</p> <ul style="list-style-type: none"> • Principles of radiological physics and radiobiology appropriate to radiation therapy for each of the disease categories. • Radiation effects and response on organ of interest and surrounding normal tissue: acute and chronic radiation effects; complications. <p>☒ <u>Oncological emergency</u></p> <ul style="list-style-type: none"> • Septic shock • Febrile neutropenia • Cord compression • Superior vena cava obstruction. • Cardiac tamponade. • Convulsions. • Encephalopathy. • Renal failure. • Hypercalcemia. • Tumor lysis syndrome. • Bleeding. 		
<p>C. Mention basics of the following rare diseases and conditions</p> <p>☒ <u>Breast Cancer</u></p> <ul style="list-style-type: none"> • Male breast cancer • Breast cancer in pregnancy • Breast cancer in elderly women • Breast cancer in very young women • Breast cancer presenting as axillary metastases • Phyllodes tumors • Paget's disease of the nipple <p>☒ <u>Gastrointestinal Cancer</u></p> <ul style="list-style-type: none"> • Peritoneal mesothelioma <p>☒ <u>Genitourinary Cancer</u></p> <ul style="list-style-type: none"> • Bilateral renal tumors • Oncocytoma • Collecting system tumor 	<p>-Lecture</p> <p>-Self-directed learning</p> <p>-Case-based studies with discussion and problem solving.</p>	<p>-OSCE at the end of each year</p> <p>-logbook & portfolio</p> <p>- One MCQ examination at the second half of the second year and another one in the third year</p> <p>-Written and oral examination</p>

<ul style="list-style-type: none"> • Urachal carcinoma • Small-cell carcinoma of prostate • Penile Cancer • Growing teratoma • False-positive serum markers in germ cell tumors • Tumor sanctuary sites (testes) • Non-germ cell testicular tumors • Secondary malignancies <p>☒ <u>Gynecological Cancer</u></p> <ul style="list-style-type: none"> • Uterine sarcoma • Gestational trophoblastic disease • Cervical cancer during pregnancy • Nonepithelial ovarian cancer • Low-malignant potential ovarian cancers • Fallopian tube tumors • Primary peritoneal tumors <p>☒ <u>Hematological malignancy</u></p> <ul style="list-style-type: none"> • Richter's syndrome • Hypogammaglobulinemia and infection • Autoimmune hemolytic anemia and thrombocytopenia • Monoclonal gammopathy of uncertain significance (MGUS) • Waldenstrom's macroglobulinemia • lymphoplasmacytic lymphoma with serum immunoglobulin-M) <p>☒ <u>Head and neck Cancer</u></p> <ul style="list-style-type: none"> • Esthesioneuroblastoma • Adenoid optic carcinoma and pleomorphic adenoma • Paragangliomas • Glomus tumors • Nasopharyngeal angiofibroma • Ocular tumours <p><u>Thoracic Cancer</u></p>		
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<ul style="list-style-type: none"> • Bronchoalveolar carcinoma • Pancoast tumors • Thymomas and Thymic Cancer • Benign mesotheliomas ☒ <u>Sarcoma and skin Cancer</u> • GIST • dermatofibrosarcoma protuberance • Melanoma of Unknown primary • Oral Melanoma • Anorectal Melanoma • Vaginal/vulvar Melanoma • Neuroendocrine (carcinoid) Tumors • Merkel cell tumor ☒ <u>Pediatric Cancer</u> • Hepatoblastoma 		
D. Explain the facts and principles of the relevant basic and clinically supportive sciences related to Clinical Oncology		
E. Explain the facts and principles of the relevant basic and clinically supportive sciences related to Clinical Oncology		
F. Describe the basic ethical and medicolegal principles relevant to the Clinical Oncology.		
G. Describe the basics and measurements of quality assurance to ensure good clinical care in Clinical Oncology		
H. Explain the ethical and scientific principles of medical research		
I. Explain the impact of common health problems in the field of Clinical Oncology on the society.		

B-Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Design / present case in common problem related to Clinical Oncology	-Clinical rounds -Senior staff experience	-Procedure and case presentation -Log book & Portfolio
B. Apply the basic and clinically supportive sciences which are appropriate to the speciality related conditions / problem / topics.		
C. Demonstrate an investigatory and analytic thinking “problem – solving” approaches to clinical situation related to Clinical Oncology		
D. Plan research projects.		
E. Write scientific papers.		
F. Lead risk management activities as a part of clinical governs: • Cardiopulmonary resuscitation		
G. Plan quality improvement activities in the field of medical education and clinical practice in his speciality.		
H. Create / innovate plans, systems, and other issues for improvement of performance in his practice.		
I. Present and defend his / her data in front of a panel of experts		
J. Formulate management plans and alternative decisions in different situations in the field of Clinical Oncology		

C-Practical skills (PatientCare)

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Take history, examine and clinically diagnose different conditions related to Clinical Oncology.	Didactic (lectures, seminars, tutorial) -Clinical rounds Clinical rotations (service teaching)	-OSCE at the end of each year -logbook & portfolio - One MCQ examination at the second half of the second year and another one in the third year -Clinical exam
B. Order the following non invasive and invasive diagnostic procedures <ul style="list-style-type: none"> • Routine appropriate Lab investigations related to Clinical Oncology • Cytology • Cultures and sensitivity • Blood gases • Serum electrolytes • Endocrinal profile • Protein electrophoresis • Bence Jones protein 	Clinical round with senior staff Observation -Post graduate teaching -Hand on workshops -Perform under supervision of	Procedure presentation - Log book - Check list

<ul style="list-style-type: none"> • Tuberculin test • Hormonal receptors • Molecular receptors • Tumor markers • Immunophenotyping • Mammography • Breast US • Breast MRI • Chest Xray • CT chest • MRI chest • Abdominal US • CT abdomen • CT pelvis • MRI abdomen • MRI pelvis • Bone Scan • Thyroid scan • Renal scan • PET-CT • CT brain • MRI brain • Barium studies • Radiofrequency • ECHO • Pulmonary function testing • Biopsy • Pleural aspiration • Paracentesis • Bronchoscopy • Thoracoscopy 	senior staff	
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<ul style="list-style-type: none"> • Cystoscopy • Endoscopy (Upper, Lower, Pan, Fibro-optic) • TVUS • TRUS • Bone marrow aspirate • Bone marrow biopsy • CSF cytology 		
<p>C. Interpret the non invasive and invasive diagnostic procedures that mentioned in C.B</p>	<p>- Clinical round with senior staff</p> <p>Observation</p> <p>-Post graduate teaching</p> <p>-Hand on workshops</p> <p>-Perform under supervision of senior staff</p>	<p>Procedure presentation</p> <p>- Log book</p> <p>- Chick list</p>
<p>D. Perform the following non invasive and invasive diagnostic procedures</p> <ul style="list-style-type: none"> • Intravenous canulation • Blood gases 		
<p>E. Prescribe the following non invasive and invasive therapeutic procedures</p> <p><input checked="" type="checkbox"/> <u>Radiotherapy</u></p> <ul style="list-style-type: none"> • radiation therapy techniques (including 3-D conformal radiation therapy [3-DCRT] and intensity-modulated radiation therapy [IMRT], brachytherapy, Stereotactic 	<p>Observation</p> <p>-Post graduate teaching</p> <p>-Hand on workshops</p>	<p>Procedure presentation</p> <p>- Log book</p> <p>- Chick list</p>

<p>radiosurgery and radiotherapy[SRS, SRT], image guided radiotherapy [IGRT] as they become integrated into the therapy of these patients</p> <ul style="list-style-type: none"> • treatment plans and dosimetry including: <ul style="list-style-type: none"> ✚ Determination of treatment volume clinically and on CT scans ✚ Determination of appropriate doses and fractionation, depending on clinical/pathologic circumstances ✚ Irradiation technique of regional lymphatic ✚ Field arrangements and match line techniques, and doses, including use of electron fields vs. tangential fields ✚ Set-up of different radiotherapy Techniques • A variety of palliative situations (CNS metastasis – brain, bone/spinal metastasis) • Learn basic critical organ dose parameters and begin to integrate this information into the patient’s radiation therapy treatment plan. ✚ <u>Chemotherapeutic regimens</u> • Methods of preparation and administration of different chemotherapy regimens • Managing different complications and side effects of chemotherapy • Lumbar puncture and intrathecal injections 		
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<p><u>☒ Hormonal therapy</u></p> <ul style="list-style-type: none"> • Methods of preparation and administration of different hormonal therapy. • Managing different complications and side effects of hormonal therapy. <p><u>☒ Target therapy</u></p> <ul style="list-style-type: none"> • Methods of preparation and administration of different target therapy. • Managing different complications and side effects of target therapy. <p><u>☒ Cannula insertion.</u></p> <p><u>☒ Aseptic venepuncture and use of infusion pump</u></p> <p><u>☒ Central venous devices care.</u></p> <p><u>☒ Ascitic tap and paracentesis</u></p> <p><u>☒ Pleurodesis and handling of intercostals tube.</u></p> <p><u>☒ Pleural tapping</u></p> <p><u>☒ Urethral catheterization.</u></p> <p><u>☒ Nasogastric tube placement and central feeding.</u></p>		
<p>F. Perform the non invasive and invasive therapeutic procedures that mentioned in C.D</p>	<p>Observation -Post graduate teaching -Hand on workshops</p>	<p>Procedure presentation - Log book - Chick list</p>
<p>G. Develop and carry out patient management plans for the problems mentioned in A.A</p>	<p>Clinical round with senior staff</p>	

H. Counsel and educate patients and their family about conditions mentioned in A.A.	Clinical round with senior staff	
I. Use information technology to support patient care decisions and patient education for Clinical Oncology related conditions	Clinical round with senior staff	
J. Provide health care services aimed at preventing the conditions mentioned in A.A in addition to: <ul style="list-style-type: none"> • Side effects of systemic therapy including [chemotherapy, hormonal therapy and target therapy] • Side effects of radiotherapy depending on the site and techniques. 	Clinical round with senior staff	
K. Work with health care professionals, including those from other disciplines, to provide patient-focused care.	Clinical round with senior staff	
L. Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets.(Write and evaluate a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and evaluating comprehensive, timely and legible medical records)		

D-General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Perform practice-based improvement activities using a systematic methodology in the common problems (plan and conduct audit cycles) in conditions mentioned in A.A and A.C	-Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops	- Global rating -Procedure & case presentation -Log book & Portfolios - Chick list
B. Locate, appraises, and assimilates evidence from scientific studies related to patients' health problems.	-Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops	- Global rating -Procedure & case presentation -Log book & Portfolios - Chick list
C. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness		
D. Use information technology to manage information, access on-line medical information; and support their own education		
E. Lead the learning of students and other health care professionals.		

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
F. Create and sustain a therapeutic and ethically sound relationship with patients	Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops	- Global rating -Procedure & case presentation -Log book & Portfolios - Chick list
G. Perform the following oral communications: <ul style="list-style-type: none"> • Interpretation of the results of different investigations related to Clinical Oncology and discussion of different therapeutic options 		
H. Fill the following reports: <ul style="list-style-type: none"> • Patients' medical reports • Death report 		
I. Work effectively with others as a member or leader of a health care team as regard diagnosis and treatment of conditions mentioned in A.A and A.C		

Professionalism

ILOs	Methods of teaching/ Learning	Methods of Evaluation
J. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supersedes self-interest.	Observation - Senior staff experience - Case taking	1. Objective structured clinical examination 2. Patient

		survey
K. Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.		1. 360o global rating
L. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities		

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
M. Work effectively in different health care delivery settings and systems.	Observation - Senior staff experience	1. 360o global rating
N. Practice cost-effective health care and resource allocation that does not compromise quality of care		1. Check list evaluation of live or recorded performance
O. Advocate for quality patient care and assist patients in dealing with system complexities		1. 360o global rating 2. Patient survey
P. Partner with health care managers and health care providers to assess, coordinate, and improve health care and predict how these activities can affect system performance		

4. Course contents (topic s/modules/rotation Course (Unit 1)Matrix

Time Schedule: Second part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skills C	General Skills D
• Section 1: Imaging/staging techniques in diagnosis, staging, and follow-up	B-I	A-J	A-L	A-P
• Radiographic	B-I	A-J	A-L	A-P
• Computed tomography (CT)	B-I	A-J	A-L	A-P
• Ultrasound	B-I	A-J	A-L	A-P
• Magnetic resonance imaging (MRI)	B-I	A-J	A-L	A-P
• Positron emission tomography (PET)	B-I	A-J	A-L	A-P
• Endoscopic imaging techniques	B-I	A-J	A-L	A-P
• Section 2: Surgical oncology	B-I	A-J	A-L	A-P
• Preoperative evaluation	B-I	A-J	A-L	A-P
• Surgery for specific types and sites	B-I	A-J	A-L	A-P
• Biopsy techniques	B-I	A-J	A-L	A-P
• Section 3: Radiation oncology	B-I	A-J	A-L	A-P
• Section 4: Chemotherapy	B-I	-	-	-
• Predicting response and toxicity	B-I	-	-	-
• Section 5: Hormonal therapy	B-I	-	-	-
• Estrogens	B-I	-	-	-

• Selective estrogen response modifiers	B-I	-	-	-
• Progestins and antiprogestins	B-I	-	-	-
• Aromatase inhibitors	B-I	-	-	-
• Androgens and antiandrogens	B-I	-	-	-
• Gonadotropin-releasing hormone analogs	B-I	-	-	-
• Glucocorticoids	B-I	-	-	-
• Miscellaneous agents	B-I	-	-	-
• Section 6: Biologic/Targeted Therapy	B-I	-	-	-
• Basic concepts of targeted molecular therapies	B-I	-	-	-
• Monoclonal antibodies	B-I	-	-	-
• Tumor vaccines	B-I	-	-	-
• Cellular therapy	B-I	-	-	-
• Antiangiogenic agents	B-I	-	-	-
• Cytokines	B-I	-	-	-
• Gene-directed therapy	B-I	-	-	-
• Section 7: Cancer prevention	B-I	A-J	A-L	A-P
• Lifestyle changes	B-I	A-J	A-L	A-P
• Chemoprevention	B-I	A-J	A-L	A-P
• Surgical role	B-I	A-J	A-L	A-P
• Section 8 : Cancer Screening	B-I	A-J	A-L	A-P
• Section9: BreastCancer	A-I	A-J	A-L	A-P
• Epidemiologic and etiologic risk factors, tumor markers/molecular genetics for breast cancer.	A-I	A-J	A-L	A-P
• Natural history, typical	A-I	A-J	A-L	A-P

clinical presentations and diagnostic work-up, staging, clinico-pathologic manifestations and prognostic factors of breast cancer.				
• Principles of multidisciplinary treatment and management for early stage breast cancer	A-I	A-J	A-L	A-P
• Principles of multidisciplinary management and treatment of: Locally advanced breast cancer, Inflammatory breast cancer, Types/use of systemic therapy (chemotherapy, hormonal therapy), Role of radiation therapy (post-mastectomy)	A-I	A-J	A-L	A-P
• Radiation effects of the breast and surrounding normal tissue.	A-I	A-J	A-L	A-P
• Expected therapeutic outcomes of treatments, including expected control rates.	A-I	A-J	A-L	A-P
• Supportive care and follow up	A-I	A-J	A-L	A-P
• Section 10: Gastrointestinal Cancer	A-I	A-J	A-L	A-P
• Epidemiologic and etiologic risk factors, tumor markers/molecular genetics, potential preventative and screening	A-I	A-J	A-L	A-P

methods.				
<ul style="list-style-type: none"> Natural history, typical clinical presentations, diagnostic workup and staging, clinico-pathologic manifestations and prognostic factors of GIT cancer 	A-I	A-J	A-L	A-P
<ul style="list-style-type: none"> Principles of multidisciplinary treatment and management and role(s) of radiation therapy for each of the disease sites and categories 	A-I	A-J	A-L	A-P
<ul style="list-style-type: none"> Expected therapeutic outcomes of treatments, including expected control rates. 	A-I	A-J	A-L	A-P
<ul style="list-style-type: none"> Principles of treatment of primary site lymph node region for each of the disease categories and stage of disease. 	A-I	A-J	A-L	A-P
<ul style="list-style-type: none"> Principles of radiological physics and radiobiology appropriate to radiation therapy for each of the disease categories 	A-I	A-J	A-L	A-P
<ul style="list-style-type: none"> In-depth knowledge of controversial areas or unusual situations in each of the disease categories, including: Adjuvant therapy of colon cancer, Pros and cons of pre-operative and postoperative radiation for rectal cancer, 	A-I	A-J	A-L	A-P

Chemoradiation for anal canal cancer.				
• Radiation effects and response on organ of interest and surrounding normal tissue: acute and chronic radiation effects; complications.	A-I	A-J	A-L	A-P
• Section 11: Genitourinary Cancer	A-I	A-J	A-L	A-P
• Epidemiologic and etiologic risk factors, tumor markers/molecular genetics, including prevention and screening methods.	A-I	A-J	A-L	A-P
• Natural history, typical clinical presentations, diagnostic workup and staging, clinico-pathologic manifestations and prognostic factors of GIT cancer.	A-I	A-J	A-L	A-P
• Principles of multidisciplinary treatment and management and role(s) of radiation therapy for each of the disease sites/categories.	A-I	A-J	A-L	A-P
• Treatment of primary site and lymph node regions for each of the disease sites and stage of disease	A-I	A-J	A-L	A-P
• Principles of radiological physics and radiobiology as appropriate to radiation therapy for each of the	A-I	A-J	A-L	A-P

disease categories				
• Basic knowledge of areas of controversy in each of the disease categories	A-I	A-J	A-L	A-P
• Radiation effects and response on organ of interest and surrounding normal tissue: acute and chronic radiation effects; complications.	A-I	A-J	A-L	A-P
• Section 12: Gynecological Cancer	A-I	A-J	A-L	A-P
• Epidemiologic and etiologic risk factors, tumor markers/molecular genetics.	A-I	A-J	A-L	A-P
• Natural history, clinical presentation and diagnostic work-up, staging, clinico-pathological manifestation and prognostic factors of gynecologic malignancies	A-I	A-J	A-L	A-P
• Principles of multidisciplinary treatment and management for each site and stage	A-I	A-J	A-L	A-P
• Principles of radiological physics and radiobiology appropriate for radiation therapy to each of these sites	A-I	A-J	A-L	A-P
• Specific medical knowledge Cervix	A-I	A-J	A-L	A-P
• Specific medical knowledge Endometrial	A-I	A-J	A-L	A-P

• Specific medical knowledge Vulva	A-I	A-J	A-L	A-P
• Specific medical knowledge Vaginal	A-I	A-J	A-L	A-P
• Specific medical knowledge Ovarian	A-I	A-J	A-L	A-P
• Indications for whole abdominal/pelvic radiation post-operatively	A-I	A-J	A-L	A-P
• Radiation effects and response on organ of interest and surrounding normal tissue: acute and chronic radiation effects; complications	A-I	A-J	A-L	A-P
• Section 13: Hematological malignancy	A-I	A-J	A-L	A-P
• Epidemiologic and etiologic risk factors, tumor markers/molecular genetics.	A-I	A-J	A-L	A-P
• Natural history, clinical presentation and diagnostic work-up, staging, clinico-pathological manifestation and prognostic factors of hematological malignancies.	A-I	A-J	A-L	A-P
• Principles of multidisciplinary management and treatment and, specifically, the role of chemotherapy and radiation therapy for each of the disease sites	A-I	A-J	A-L	A-P

<p>and according to disease stage:</p> <ul style="list-style-type: none"> Lymphoma, Hodgkin's Disease, Non-Hodgkin's Lymphoma, Multiple myeloma/leukemia, Acute Leukemias (ALL/AML) and Chronic Leukemias (CLL/CML) 				
<ul style="list-style-type: none"> Principles of treatment of the lymph node region for each of the disease categories by stage of disease. 	A-I	A-J	A-L	A-P
<ul style="list-style-type: none"> Principles of radiological physics and radiobiology appropriate to radiation therapy for each of the disease categories. 	A-I	A-J	A-L	A-P
<ul style="list-style-type: none"> knowledge of controversial areas or unusual situations in each of the disease categories, including those regarding: Hodgkin's Disease/Non-Hodgkin's Disease and CNS lymphoma. 	A-I	A-J	A-L	A-P
<ul style="list-style-type: none"> Radiation effects and response on organ of interest and surrounding normal tissue: acute and chronic radiation effects; complications. 	A-I	A-J	A-L	A-P
<ul style="list-style-type: none"> Section 14: Head and neck Cancer 	A-I	A-J	A-L	A-P
<ul style="list-style-type: none"> Epidemiologic and etiologic risk factors, tumor 	A-I	A-J	A-L	A-P

markers/molecular genetics.				
<ul style="list-style-type: none"> Natural history, clinical presentation and diagnostic work-up(including ENT endoscopy and laryngoscopy), staging, clinico-pathological manifestation and prognostic factors of head and neck cancers. 	A-I	A-J	A-L	A-P
<ul style="list-style-type: none"> Principles of multidisciplinary management and treatment and, specifically, the role of chemotherapy and radiation therapy (including brachytherapy, altered fractionation 3-D CRT and IMRT, if appropriate)for each of the disease sites and according to disease stage 	A-I	A-J	A-L	A-P
<ul style="list-style-type: none"> Principles of treatment of primary site and lymph node regions for each of the disease sites and stage of disease; know indications for treatment for each site and stage of disease 	A-I	A-J	A-L	A-P
<ul style="list-style-type: none"> Principles of radiological physics and radiobiology appropriate to radiation therapy for each of the disease categories 	A-I	A-J	A-L	A-P

<ul style="list-style-type: none"> • Radiation effects and response on organ of interest and surrounding normal tissue: acute and chronic radiation effects; complications. 	A-I	A-J	A-L	A-P
<ul style="list-style-type: none"> • Section 15: Thoracic Cancer 	A-I	A-J	A-L	A-P
<ul style="list-style-type: none"> • Epidemiologic and etiologic risk factors, tumor markers/molecular genetics. 	A-I	A-J	A-L	A-P
<ul style="list-style-type: none"> • Natural history, clinical presentation and diagnostic work-up(including role of bronchoscopy and mediastinoscopy), staging, clinico-pathological manifestation and prognostic factors of thoracic tumors 	A-I	A-J	A-L	A-P
<ul style="list-style-type: none"> • Principles of multidisciplinary management and treatment and, specifically, the role of chemotherapy and radiation therapy (including brachytherapy, altered fractionation 3-D CRT and IMRT, if appropriate)for each of the disease sites and according to disease stage 	A-I	A-J	A-L	A-P
<ul style="list-style-type: none"> • Principles of treatment of primary site and lymph node regions for each of 	A-I	A-J	A-L	A-P

the disease sites and stage of disease; know indications for treatment for each site and stage of disease.				
• Principles of radiological physics and radiobiology appropriate to radiation therapy for each of the disease categories	A-I	A-J	A-L	A-P
• Radiation effects and response on organ of interest and surrounding normal tissue: acute and chronic radiation effects; complications.	A-I	A-J	A-L	A-P
• Section 16: Sarcoma and skin Cancer	A-I	A-J	A-L	A-P
• Epidemiologic and etiologic risk factors, tumor markers/molecular genetics.	A-I	A-J	A-L	A-P
• Natural history, clinical presentation and diagnostic work-up (including role of bronchoscopy and mediastinoscopy), staging, clinico-pathological manifestation and prognostic factors of sarcoma and skin cancer	A-I	A-J	A-L	A-P
• Principles of multidisciplinary management and treatment and, specifically, the role of chemotherapy	A-I	A-J	A-L	A-P

and radiation therapy for each of the disease sites and according to disease stage				
• Radiation effects and response on organ of interest and surrounding normal tissue: acute and chronic radiation effects; complications.	A-I	A-J	A-L	A-P
• Section 17: Pediatric Cancer	A-I	A-J	A-L	A-P
• Epidemiologic and etiologic risk factors, tumor markers/molecular genetics.	A-I	A-J	A-L	A-P
• Natural history, clinical presentation and diagnostic work-up (including role of bronchoscopy and mediastinoscopy), staging, clinico-pathological manifestation and prognostic factors of pediatric cancers.	A-I	A-J	A-L	A-P
• Principles of multidisciplinary management and treatment and, specifically, the role of chemotherapy and radiation therapy for each of the disease sites and according to disease stage	A-I	A-J	A-L	A-P
• Principles of radiological physics and radiobiology	A-I	A-J	A-L	A-P

appropriate to radiation therapy for each of the disease categories.				
• Radiation effects and response on organ of interest and surrounding normal tissue: acute and chronic radiation effects; complications.	A-I	A-J	A-L	A-P
• Section 18: Oncological emergency	A-I	A-J	A-L	A-P
• Septic shock	A-I	A-J	A-L	A-P
• Febrile neutropenia	A-I	A-J	A-L	A-P
• Cord compression	A-I	A-J	A-L	A-P
• Superior venacava obstruction	A-I	A-J	A-L	A-P
• Cardiac tamponade.	A-I	A-J	A-L	A-P
• Convulsions.	A-I	A-J	A-L	A-P
• Encephalopathy.	A-I	A-J	A-L	A-P
• Renal failure.	A-I	A-J	A-L	A-P
• Hypercalcemia	A-I	A-J	A-L	A-P
• Tumor lysis syndrome.	A-I	A-J	A-L	A-P
• Bleeding.	A-I	A-J	A-L	A-P
• Male breast cancer	C	A-J	A-L	A-P
• Breast cancer in pregnancy	C	A-J	A-L	A-P
• Breast cancer in elderly women	C	A-J	A-L	A-P
• Breast cancer in very young women	C	A-J	A-L	A-P
• Breast cancer presenting as axillary metastases	C	A-J	A-L	A-P
• Phyllodes tumors	C	A-J	A-L	A-P
• Paget's disease of the nipple	C	A-J	A-L	A-P

• Peritoneal mesothelioma	C	A-J	A-L	A-P
• Bilateral renal tumors	C	A-J	A-L	A-P
• Oncocytoma	C	A-J	A-L	A-P
• Collecting system tumor	C	A-J	A-L	A-P
• Urachal carcinoma	C	A-J	A-L	A-P
• Small-cell carcinoma of prostate	C	A-J	A-L	A-P
• Penile Cancer	C	A-J	A-L	A-P
• Growing teratoma	C	A-J	A-L	A-P
• False-positive serum markers in germ cell tumors	C	A-J	A-L	A-P
• Tumor sanctuary sites (testes)	C	A-J	A-L	A-P
• Non-germ cell testicular tumors	C	A-J	A-L	A-P
• Secondary malignancies	C	A-J	A-L	A-P
• Uterine sarcoma	C	A-J	A-L	A-P
• Gestational trophoblastic disease	C	A-J	A-L	A-P
• Cervical cancer during pregnancy	C	A-J	A-L	A-P
• Nonepithelial ovarian cancer	C	A-J	A-L	A-P
• Low-malignant potential ovarian cancers	C	A-J	A-L	A-P
• Fallopian tube tumors	C	A-J	A-L	A-P
• Primary peritoneal tumors	C	A-J	A-L	A-P
• Richter's syndrome	C	A-J	A-L	A-P
• Hypogammaglobulinemia and infection	C	A-J	A-L	A-P
• Autoimmune hemolytic anemia and thrombocytopenia	C	A-J	A-L	A-P

• Monoclonal gammopathy of uncertain significance (MGUS)	C	A-J	A-L	A-P
• Waldenstrom's macroglobulinemia	C	A-J	A-L	A-P
• lymphoplasmacytic lymphoma with serum immunoglobulin-M)	C	A-J	A-L	A-P
• Esthesioneuroblastoma	C	A-J	A-L	A-P
• Adenoid optic carcinoma and pleomorphic adenoma	C	A-J	A-L	A-P
• Paragangliomas	C	A-J	A-L	A-P
• Glomus tumors	C	A-J	A-L	A-P
• Nasopharyngeal angiofibroma	C	A-J	A-L	A-P
• Ocular tumours	C	A-J	A-L	A-P
• Bronchoalveolar carcinoma	C	A-J	A-L	A-P
• Pancoast tumors	C	A-J	A-L	A-P
• Thymomas and Thymic Cancer	C	A-J	A-L	A-P
• Benign mesotheliomas	C	A-J	A-L	A-P
• GIST	C	A-J	A-L	A-P
• dermatofibrosarcoma protuberance	C	A-J	A-L	A-P
• Melanoma of Unknown primary	C	A-J	A-L	A-P
• Oral Melanoma	C	A-J	A-L	A-P
• Anorectal Melanoma	C	A-J	A-L	A-P
• Vaginal/vulvar Melanoma	C	A-J	A-L	A-P
• Neuroendocrine (carcinoid) Tumors	C	A-J	A-L	A-P
• Hepatoblastoma	C	A-J	A-L	A-P

5. Methods of teaching/learning:

1. Didactic (lectures, seminars, tutorial)
2. Outpatient
3. Inpatient
4. Clinical rounds
5. Clinical rotations
6. Service teaching
7. Direct observation
8. Post graduate teaching
9. Hand on workshops
10. Perform under supervision of senior staff
11. Simulations
12. Present a case (true or simulated) in a grand round
13. Case Taking
14. journal club,
15. Critically appraised topic,
16. Educational prescription
17. Observation & supervision
18. Written & oral communications

6. Methods of teaching/learning: for students with poor achievements

1. Extra Didactic (lectures, seminars, tutorial) according to their needs
2. Extra training according to their needs

7. Assessment methods:

i. Assessment tools:

- Clinical examination
- Written
- Oral examination
- Check list
- log book & portfolio
- Procedure/case presentation
- One MCQ examination in the second year and one in the third year
- Objective structured clinical examination
- Check list evaluation of live or recorded performance

- Record review (report)
- Patient survey
- 360° global rating

ii. **Time schedule:** At the end of the second part

iii. **Marks:** 1200 marks

8. List of references

i. Lectures notes

- Course notes
- Staff members print out of lectures and/or CD copies

ii. Essential books

- Cancer: principles and practice of oncology. De Vita et al. Eighth edition, April 22, 2008
- Principles and Practice of Radiation Oncology. Perez et al., December 3, 2007

iii. Recommended books

- Clinical Radiation Oncology by Leonard L. Gunderson et al., second edition, 2007.
- Manual of Clinical Oncology by Dennis A. Casciato et al., sixth edition, 2009
- Cancer Management: A Multidisciplinary Approach. Richard Pazdur et al., May 2009.

iv. Periodicals, Web sites, ... etc

- www.NCCN.com
- www.asco.org
- www.uicc.org
- www.EORTC.org
- www.medscape.com
- www.cancer.gov/
- <http://annonc.oxfordjournals.org/>
- www.redjournal.org/

v. Others: None

9. Signatures

Head of the Department:	Course Coordinator:
Date:	Date:

ANNEX 2

Program Academic Reference Standards (ARS)

1- Graduate attributes for medical doctorate *in Clinical Oncology*

The Graduate (after residence training and medical doctorate years of study) must:

- 1- Demonstrate competency and mastery of basics, methods and tools of scientific research and clinical audit in Clinical Oncology .
- 2- Have continuous ability to add knowledge to Clinical Oncology through research and publication.
- 3- Appraise and utilise relevant scientific knowledge to continuously update and improve clinical practice.
- 4- Acquire excellent level of medical knowledge in the basic biomedical, behavioural and clinical sciences, medical ethics and medical jurisprudence and apply such knowledge in patient care and scientific research.
- 5- Function as a leader of a team to provide patient care that is appropriate, effective and compassionate for dealing with health problems and health promotion.
- 6- Identify and create solutions for health problems in Clinical Oncology
- .7- Acquire an in depth understanding of common areas of Clinical Oncology, from basic clinical care to evidence based clinical application, and possession of required skills to manage independently all problems in these areas.
- 8- Demonstrate leadership competencies including interpersonal and communication skills that ensure

effective information exchange with individual patients and their families and teamwork with other health professions, the scientific community and the public.

- 9-** Function as teacher in relation to colleagues, medical students and other health professions.
- 10-** Master decision making capabilities in different situations related to Clinical Oncology
- 11-** Show leadership responsiveness to the larger context of the health care system, including e.g. the organisation of health care, partnership with health care providers and managers, practice of cost-effective health care, health economics, and resource allocations.
- 12-** Demonstrate in depth awareness of public health and health policy issues including independent ability to improve health care, and identify and carry out system-based improvement of care.
- 13-** Show model attitudes and professionalism.
- 14-** Demonstrate commitment for lifelong learning and maintenance of competence and ability for continuous medical education and learning in subsequent stages and in Clinical Oncology or one of its subspecialties.
- 15-** Use recent technologies to improve his practice in Clinical Oncology.
- 16-** Share in updating and improving clinical practice in Clinical Oncology .

2- Competency based Standards for medical doctorate in Clinical Oncology

22.1- Knowledge and understanding

By the end of the program, the graduate should demonstrate satisfactory knowledge and understanding of

2-1-A- Established, updated and evidence- based theories, basics and developments of Clinical Oncology and relevant sciences.

2-1-B- Basics, methods and ethics of medical research.

2-1-C- Ethical and medicolegal principles of medical practice related to Clinical Oncology.

2-1-D- Principles and measurements of quality in Clinical Oncology.

2-1-E- Principles and efforts for maintainance and improvements of public health.

2- Intellectual skills

By the end of the program, the graduate should be able to demonstrate the following

2-2-A- Application of basic and other relevant science to solve Clinical Oncology related Problems.

2-2-B- Problem solving based on available data.

2-2-C- Involvement in research studies related to Clinical Oncology.

2-2-D- Writing scientific papers.

2-2-E- Risk evaluation in the related clinical practice.

2-2-F- Planning for performance improvement in Clinical Oncology.

2-2-G- Creation and innovation in Clinical Oncology.

2-2-H- Evidence– based discussion.

2-2-I- Decision making in different situations related to Clinical Oncology.

2.3- Clinical skills

By the end of the program, the graduate should be able to

+ Competency-based outcomes for Patient Care:-

- 2-3-A-** MD students must be able to provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health extensive level means in depth understanding and from basic science to evidence – based clinical application and possession of skills to manage independently all problems in Clinical Oncology.
- 2-3-B-** Master patient care skills relevant to Clinical Oncology for patients with all diagnoses and procedures.
- 2-3-C-** Write and evaluate reports for situations related to the Clinical Oncology.

2.4- General skills

By the end of the program, the graduate should be able to

+ Competency-based outcomes for Practice-based Learning and Improvement

- 2-4-A-** Master practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management
- 2-4-B-** Use competently all information sources and technology to improve his practice.
- 2-4-C-** Master skills of teaching and evaluating others.

+ Competency-based objectives for Interpersonal and Communication Skills

- 2-4-D-** Master interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and other health professionals.

+ Competency-based objectives for Professionalism

- 2-4-E-** Master Professionalism behavior, as manifested through a commitment to carrying out professional

responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

 ***Competency-based objectives for Systems-based Practice:***

2-4-F- Demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively use system resources to provide care that is of optimal value.

2-4-G- Participate in improvement of the education system.

2-4-H- Demonstrate skills of leading scientific meetings including time management

2-4-O- Demonstrate skills of self and continuous learning.

Annex 3, Methods of teaching/learning

Annex 3, Methods of teaching/learning

	Patient care	Medical knowledge	Practice- based learning/ Improvement	Interpersonal and communication skills	Professionalism	Systems- based practice
Didactic (lectures, seminars, tutorial)	X	X		X	X	X
journal club,	X	X	X			
Educational prescription	X	X	X	X	X	X
Present a case (true or simulated) in a grand round	X	X	X	X	X	
Observation and supervision	X		X	X	X	X
conferences		X	X	X		X
Written assignments	X	X	X	X	X	X
Oral assignments	X	X	X	X	X	X

Teaching methods for knowledge

- ❖ Didactic (lectures, seminars, tutorial)
- ❖ journal club
- ❖ Critically appraised topic
- ❖ Educational prescription (a structured technique for following up on clinical questions that arise during rounds and other venues).
- ❖ Present a case (true or simulated) in a grand round
- ❖ Others

Teaching methods for patient care

- ❖ Observation and supervision/Completed tasks procedure/case logs
- ❖ On-the-job” training without structured teaching is not sufficient for this skill (checklists).
- ❖ Simulation is increasingly used as an effective method for skill/ teamwork training.

Teaching methods for other skills

- ❖ Written communication (e.g., orders, progress note, transfer note, discharge summary, operative reports, and diagnostic reports).
- ❖ Oral communication (e.g., presentations, transfer of care, interactions with patients, families, colleagues, members of the health care team) and/or non verbal skills (e.g., listening, team skills)
- ❖ Professionalism, including medical ethics, may be included as a theme throughout the program curriculum that includes both didactic and experiential components (e.g., may be integrated into already existing small group discussions of

vignettes or case studies and role plays, computer-based modules) and may be modeled by the faculty in clinical practice and discussed with the resident as issues arise during their clinical practice.

Annex 4, Assessment methods

Annex 4, ILOs evaluation methods for MD students.

Method	Practical skills	K	Intellectual	General skills			
	Patient care	K	I	Practice-based learning/Improvement	Interpersonal and communication skills	Professionalism	Systems-based practice
Record review	X	X	X		X	X	X
Checklist	X				X		
Global rating	X	X	X	X	X	X	X
Simulations	X	X	X	X	X	X	
Portfolios	X	X	X	X	X		
Standardized oral examination	X	X	X	X	X		X
Written examination	X	X	X	X			X
Procedure/case log	X	X					
OSCE	X	X	X	X	X	X	X

Annex 4, Glossary of MD students assessment methods

- ❖ Record Review– Abstraction of information from patient records, such as medications or tests ordered and comparison of findings against accepted patient care standards.
- ❖ Chart Stimulated Recall Uses the MD doctor's patient records in an oral examination to assess clinical decision-making.
- ❖ Mini clinical evaluation: Evaluation of Live/Recorded Performance (single event)– A single resident interaction with a patient is evaluated using a checklist. The encounter may be videotaped for later evaluation.
- ❖ Standardized Patients (SP)– Simulated patients are trained to respond in a manner similar to real patients. The standardized patient can be trained to rate MD doctor's performance on checklists and provide feedback for history taking, physical examination, and communication skills. Physicians may also rate the MD doctor's performance.
- ❖ Objective Structured Clinical Examination (OSCE) – A series of stations with standardized tasks for the MD doctors to perform. Standardized patients and other assessment methods often are combined in an OSCE. An observer or the standardized patient may evaluate the MD doctors.
- ❖ Procedure or Case Logs- MD doctors prepare summaries of clinical experiences including clinical data. Logs are useful to document educational experiences and deficiencies.
- ❖ PSQs– Patients fill out Patient Survey questionnaires (PSQs) evaluating the quality of care provided by MD doctors.

- ❖ Case/problems– assess use of knowledge in diagnosing or treating patients or evaluate procedural skills.
- ❖ Models: are simulations using mannequins or various anatomic structures to assess procedural skills and interpret clinical findings. Both are useful to assess practice performance and provide constructive feedback.
- ❖ 360 Global Rating Evaluations– MD doctors, faculty, nurses, clerks, and other clinical staff evaluate MD doctors from different perspectives using similar rating forms.
- ❖ Portfolios– A portfolio is a set of project reports that are prepared by the MD doctors to document projects completed during the MD study years. For each type of project standards of performance are set. Example projects are summarizing the research literature for selecting a treatment option, implementing a quality improvement program, revising a medical student clerkship elective, and creating a computer program to track patient care and outcomes.
- ❖ Examination MCQ– A standardized examination using multiple-choice questions (MCQ). The in-training examination and written board examinations are examples.
- ❖ Examination Ora– Uses structured realistic cases and patient case protocols in an oral examination to assess clinical decision-making.
- ❖ Procedure or Case Logs– MD doctors prepare summaries of clinical experiences including clinical data. Logs are useful to document educational experiences and deficiencies.
- ❖ PSQs– Patients fill out Patient Survey questionnaires (PSQs) evaluating the quality of care provided by MD doctors.

Annex 5, Program evaluation tools

By whom	Method	sample
Quality Assurance Unit	Reports Field visits	#
External Evaluator (s): According to department council External Examiner (s): According to department council	Reports Field visits	#
Stakeholders	Reports Field visits questionnaires	#
Senior students	questionnaires	#
Alumni	questionnaires	#

Annex 6, Program Correlations:

مصفوفة توافق المعايير القومية القياسية العامة لبرامج الدكتوراه مع المعايير الأكاديمية
المعتمدة من كلية الطب – جامعة أسيوط لدرجة الدكتوراه في طب الأطفال

1- Graduate attributes

I- General Academic Reference Standards (GARS) versus Program ARS

Faculty ARS	NAQAEE General ARS for Postgraduate Programs
1- Demonstrate competency and mastery of basics, methods and tools of scientific research and clinical audit in Pediatrics.	1- إتقان أساسيات و منهجيات البحث العلمي
2- Have continuous ability to add knowledge new developments to Pediatrics through research and publication.	2- العمل المستمر علي الإضافة للمعارف في مجال التخصص
3- Appraise and utilise scientific knowledge to continuously update and improve clinical practice and relevant basic sciences.	3- تطبيق المنهج التحليلي والناقد للمعارف في مجال التخصص و المجالات ذات العلاقة
4- Acquire excellent level of medical knowledge in the basic biomedical, clinical, behavioural and clinical sciences, medical ethics and medical jurisprudence and apply such knowledge in patient care and scientific	4- دمج المعارف المتخصصة مع المعارف ذات العلاقة مستتبطينا و مطورا للعلاقات البينية بينها
5- Function as a leader of a team to provide patient care that is appropriate, effective and compassionate for dealing with health Problems and health promotion. 7- Acquire an in depth understanding of common areas of speciality, from basic clinical care to evidence based clinical application, and possession of skills to manage independently all problems in these areas.	5- إظهار وعيا عميقا بالمشاكل الجارية و النظريات الحديثة في مجال التخصص
6- Identify and create solutions for health problems in Pediatrics.	6- تحديد المشكلات المهنية و إيجاد حلول مبتكرة لحلها
5- Function as a leader of a team to provide patient care that is appropriate, effective and compassionate for dealing with health problems	7- إتقان نطاقا واسعا من المهارات المهنية في مجال التخصص

and health promotion. 7- Acquire an in depth understanding of common areas of Pediatrics, from basic clinical care to evidence based clinical application, and possession of skills to manage independently all problems in these areas.	
16- Share in updating and improving clinical practice in Pediatrics. 9- Function as teacher in relation to colleagues, medical students and other health professions.	8- التوجه نحو تطوير طرق و أدوات و أساليب جديدة للمزاولة المهنية
15- Use recent technologies to improve his practice in Pediatrics.	9- استخدام الوسائل التكنولوجية المناسبة بما يخدم ممارسته المهنية
8- Demonstrate leadership competencies including interpersonal and communication skills that ensure effective information exchange with individual patients and their families and teamwork with other health professions, the scientific community and the public. 5- Function as a leader of a team to provide patient care that is appropriate, effective and compassionate for dealing with health problems and health promotion.	10- التواصل بفاعلية و قيادة فريق عمل في سياقات مهنية مختلفة
10- Master decision making capabilities in different situations related to Pediatrics.	11- اتخاذ القرار في ظل المعلومات المتاحة
11- Show leadership responsiveness to the larger context of the health care system, including e.g. the organisation of health care, partnership with health care providers and managers, practice of cost-effective health care, health economics, and resource allocations.	12- توظيف الموارد المتاحة بكفاءة و تنميتها والعمل على إيجاد موارد جديدة
12- Demonstrate in depth awareness of public health and health policy issues including independent ability to improve health care, and identify and carryout system-based improvement of care.	13- الوعي بدوره في تنمية المجتمع والحفاظ على البيئة

13- Show model attitudes and professionalism.	14-التصرف بما يعكس الالتزام بالنزاهة و المصداقية و قواعد المهنة
14- Demonstrate commitment for lifelong learning and maintenance of competence and ability for continuous medical education and learning in subsequent stages and in Pediatrics or one of its subspecialties. 15- Use recent technologies to improve his practice in Pediatrics.	15-الالتزام بالتنمية الذاتية المستمرة و نقل علمه و خبراته للآخرين

2- Academic standards

Faculty ARS	NAQAAE General ARS for Postgraduate Programs
2.1. A- Established, updated and evidence- based theories, basics and developments of Pediatricsand relevant sciences.	2-1-أ- النظريات و الأساسيات والحديث من المعارف في مجال التخصص والمجالات ذات العلاقة
2.1. B- Basic, methods and ethics of medical research.	2-1-ب - أساسيات و منهجيات و أخلاقيات البحث العلمي و أدواته المختلفة
2.1. C- Ethical and medicologal principles of medical practice related to Pediatrics.	2-1-ج- المبادئ الأخلاقية و القانونية للممارسة المهنية في مجال التخصص
2.1. D- Principles and measurements of quality in Pediatrics.	2-1-د مبادئ و أساسيات الجودة في الممارسة المهنية في مجال التخصص
2.1. E- Principles and efforts for maintains and improvements of public health.	2-1-هـ - المعارف المتعلقة بآثار ممارسته المهنية على البيئة وطرق تنمية البيئة وصيانتها
2.2. A- Application of basic and other relevant science to solve Pediatricsrelated problems.	2-2-أ - تحليل و تقييم المعلومات في مجال التخصص و القياس عليها و الاستنباط منها
2.2.B- Problem solving based on available data.	2-2-ب - حل المشاكل المتخصصة استنادا علي المعطيات المتاحة
2.2.C- Involvement in research studies related to Pediatrics.	2-2-ج -إجراء دراسات بحثية تضيف إلى المعارف
2.2. D- Writing scientific papers.	2-2-د- صياغة أوراق علمية
2.2. E- Risk evaluation in the related clinical practice	2-2-هـ -تقييم المخاطر في الممارسات المهنية
2.2.F- Planning for performance improvement in Pediatrics.	2-2-و -التخطيط لتطوير الأداء في مجال التخصص
2-2-G- Creation and innovation in the Pediatrics	2-2-ز - الابتكار /الإبداع
2.2. H- Evidence – based discussion.	2-2-ح- الحوار والنقاش المبني علي البراهين والأدلة
2.2.I- Discussion making in different situations related to Pediatrics.	2-2-ط -اتخاذ القرارات المهنية في سياقات مهنية مختلفة

<p>2.3. A- MD students must be able to provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health extensive level means in depth understanding and from basic science to evidence – based clinical application and possession of skills to manage independently all problems in Pediatrics.</p> <p>2.3. B- Master patient care skills relevant to Pediatrics or patients with all diagnoses and procedures.</p>	<p>2-3-أ - إتقان المهارات المهنية الأساسية و الحديثة في مجال التخصص</p>
<p>2.3. C- Write and evaluate reports for situations related to the field of Pediatrics</p>	<p>2-3-ب - كتابة و تقييم التقارير المهنية.</p>
<p>2.4.A-Master practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management</p>	<p>2-3-ج - تقييم و تطوير الطرق و الأدوات القائمة في مجال التخصص</p>
<p>2.4.B- Use competently all information sources and technology to improve his practice.</p>	<p>2-3-د - استخدام الوسائل التكنولوجية بما يخدم الممارسة المهنية</p>
<p>2.4.A-Master practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management</p> <p>2.4.G- Participate in improvement of the education system.</p>	<p>2-3-هـ - التخطيط لتطوير الممارسة المهنية وتنمية أدام الآخرين</p>

II-Program ARS versus program ILOs

Comparison between ARS- ILOS for medical doctorate for Clinical Oncology

(ARS)	(ILOs)
<p><u>2-1- Knowledge and understanding</u></p> <p>2-1-A-Established, updated and evidence-based Theories, Basics and developments of Clinical Oncology and relevant sciences.</p>	<p><u>2-1- Knowledge and understanding</u></p> <p>2-1-A- Demonstrate in-depth knowledge and understanding of theories, basics and updated biomedical, clinical epidemiological and socio behavioral science relevant to his speciality as well as the evidence-based application of this knowledge to patient care.</p>
<p>2-1-B Basic, methods and ethics of medical research.</p>	<p>2-1-B- Explain basics, methodology, tools and ethics of scientific medical, clinical research.</p>
<p>2-1-C- Ethical and medicological principles of medical practice related to Clinical Oncology field.</p>	<p>2-1-C- Mention ethical, medico logical principles and bylaws relevant to his practice in the field of Clinical Oncology.</p>
<p>2-1-D- Principles and measurements of quality in the Clinical Oncology field.</p>	<p>2-1-D- Mention principles and measurements of quality assurance and quality improvement in medical education and in clinical practice of Clinical Oncology.</p>
<p>2-1-E- Principles and efforts for maintains and improvements of public health.</p>	<p>2-1-E- Mention health care system, public health and health policy, issues relevant to this speciality and principles and methods of system-based improvement of patient care in common health problems of the field of Clinical Oncology.</p>

<u>2-2- Intellectual skills:</u> 2-2-A- Application of basic and other relevant science to solve Clinical Oncology related problems.	<u>2-2- Intellectual skills:</u> 2-2-A- Apply the basic and clinically supportive sciences which are appropriate to Clinical Oncology related conditions / problem / topics.
2-2-B- Problem solving based on available data.	2-2-B- Demonstrate an investigatory and analytic thinking “problem – solving” approaches to clinical situation related to Clinical Oncology.
2-2-C- Involvement in research studies related to the Clinical Oncology.	2-2-C- Plan research projects.
2-2-D Writing scientific papers.	2-2-D- Write scientific paper.
2-2-E- Risk evaluation in the related clinical practice.	2-2-E- Participate in clinical risk management as a part of clinical governance.
2-2-F- Planning for performance improvement in the Clinical Oncology field.	2-2-F- Plan for quality improvement in the field of medical education and clinical practice in his speciality.
2-2-G- Creation and innovation in the speciality field.	2-2-G- Create /innovate plans, systems, and other issues for improvement of performance in his practice.
2-2-H- Evidence _ based discussion.	2-2-H- Present and defend his / her data in front of a panel of experts.
2-2-I- Decision making in different situations related to Clinical Oncology fields.	2-2-I- Formulate management plans and alternative decisions in different situations in the field of the Clinical Oncology.

continuous	continuous
<p><u>2-3- Clinical skills:</u></p> <p>2-3-A- MD students must be able to provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Extensive level means in depth understanding and from basic science to evidence– based clinical application and possession of skills to manage independently all problems in his field of practice.</p> <p>2-3-B- Master patient care skills relevant to Clinical Oncology for patients with all diagnoses and procedures.</p>	<p><u>2/3/1/Practical skills (Patient care :)</u></p> <p>2-3-1-A- Provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. <i>p.s.</i> Extensive level means in-depth understanding from basic science to evidence– based clinical application and possession of skills to manage independently all problems in field of practice.</p> <p>2-3-1-B- Provide extensive level of patient care for patients with all common diagnoses and for uncomplicated procedures related to Clinical Oncology.</p> <p>2-3-1-C- Provide extensive level of patient care for non-routine, complicated patients and under increasingly difficult circumstances, while demonstrating compassionate, appropriate and effective care.</p> <p>2-3-1-D- Perform diagnostic and therapeutic procedures considered essential in the field of Clinical Oncology.</p> <p>2-3-1-E- Handles unexpected complications, while demonstrating compassion and sensitivity to patient needs and concerns.</p> <p>2-3-1-F- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families in the Clinical</p>

	<p>Oncology related situations.</p> <p>2-3-1-G- Gather essential and accurate information about patients of the Clinical Oncology related conditions.</p> <p>2-3-1-H Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence and clinical judgment for the Clinical Oncology related conditions.</p> <p>2-3-1-I- Develop and carry out patient management plans for Clinical Oncology related conditions.</p> <p>2-3-1-J- Counsel and educate patients and their families about Clinical Oncology related conditions.</p> <p>2-3-1-K- Use information technology to support patient care decisions and patient education in all Clinical Oncology related clinical situations.</p> <p>2-3-1-L- Perform competently all medical and invasive procedures considered essential for the Clinical Oncology related conditions / area of practices.</p> <p>2-3-1-M- Provide health care services aimed at preventing the Clinical Oncology related health problems.</p> <p>2-3-1-N- Lead health care professionals, including those from other disciplines, to provide patient-focused care in Clinical Oncology related conditions.</p>
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<p>2-3-C- Write and evaluate reports for situations related to the field of Clinical Oncology.</p>	<p>2-3-1-O- Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets.(Write and evaluate a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and evaluating comprehensive timely and legible medical records).</p>
<p><u>2-4- General skills</u> 2-4-A- Master practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management</p>	<p><u>2/3/2 General skills</u> 2-3-2-A- Demonstrate the competency of continuous evaluation of different types of care provision to patients in the different area of Clinical Oncology. 2-3-2-B- Appraise scientific evidence. 2-3-2-C- Continuously improve patient care based on constant self-evaluation and <u>life-long learning</u>. 2-3-2-D. Participate in clinical audit and research projects. 2-3-2-E- Practice skills of evidence-based Medicine (EBM). 2-3-2-G- Design logbooks. 2-3-2-H- Design clinical guidelines and standard protocols of management. 2-3-2-I- Appraise evidence from scientific studies related to the patients' health problems.</p>
<p>2-4-B- Use competently all information sources and technology to improve his practice.</p>	<p>2-3-2-J- Apply knowledge of study designs and statistical methods to the appraisal of clinical studies. 2-3-2-K- Use information technology to manage information, access on-line medical information; for the important topics.</p>
<p>2-4-C- Master skills of teaching and evaluating others.</p>	<p>2-3-2-F- Educate and evaluate students, residents and other health</p>

	professionals.
<p>2-4-D- Master interpersonal and communication Skills that result in effective information exchange and teaming with patients, their families, and other health professionals.</p>	<p>2-3-2-L- Master interpersonal and communication skills that result in the effective <u>exchange of information and collaboration</u> with patients, their families, and health professionals, including:-</p> <ul style="list-style-type: none"> ● <u>Present</u> a case. ● <u>Write</u> a consultation note. ● <u>Inform patients</u> of a diagnosis and therapeutic plan Completing and maintaining comprehensive. ● Timely and legible <u>medical records</u>. ● Teamwork skills. <p>2-3-2-M- Create and sustain a therapeutic and ethically sound relationship with patients.</p> <p>2-3-2-N- Elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.</p> <p>2-3-2-O- Work effectively with others as a member or leader of a health care team or other professional group.</p>
<p>2-4-E- Master Professionalism behavior, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.</p>	<p>2-3-2-P- Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society.</p> <p>2-3-2-Q- Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.</p> <p>2-3-2-R- Demonstrate sensitivity and responsiveness to patients'</p>

	culture, age, gender, and disabilities.
<p>2-4-F-Demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively use system resources to provide care that is of optimal value.</p> <p>2-4-G-Participate in improvement of the education system.</p>	<p>2-3-2-S- Work effectively in health care delivery settings and systems related to Clinical Oncology including good administrative and time management.</p> <p>2-3-2-T- Practice cost-effective health care and resource allocation that does compromise quality of care.</p> <p>2-3-2-U- Advocate for quality patient care and assist patients in dealing with system complexities.</p> <p>2-3-2-V- Design, monitor and evaluate specification of under and post graduate courses and programs.</p>
2-4-H- Demonstrate skills of leading scientific meetings including time management	<p>2-3-2-W- Act as a chair man for scientific meetings including time management</p> <p>2-3-2-S- Work effectively in health care delivery settings and systems related to Clinical Oncology including good administrative and time management.</p>
2-4-O- Demonstrate skills of self and continuous learning .	From A to H

III-Program matrix
Knowledge and understanding

Course	Program covered ILOs				
	2/1/A	2/1/B	2/1/C	2/1/D	2/1/E
Course 1 : Medical statistics		✓			
Course 2 : Research Methodology		✓			
Course 3: Medicolegal Aspects and Ethics in Medical Practice and Scientific Research			✓		
Course 4: Physics of radiation and radiobiology)	✓				
Course 5: Internal Medicine & General Surgery	✓	✓	✓	✓	✓
Course 6: Pharmacology and Oncopathology	✓				
Course 7 : “Clinical Oncology 2”	✓	✓	✓	✓	✓

Intellectual

Course	Program covered ILOs								
	2/2/A	2/2/B	2/2/C	2/2/D	2/2/E	2/2/F	2/2/G	2/2/H	2/2/I
Course 1 : Medical statistics			✓	✓				✓	
Course 2 : Research Methodology			✓	✓				✓	
Course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research								✓	
Course 4: Physics of radiation and radiobiology)	✓	✓						✓	✓
Course 5: Internal Medicine & General Surgery	✓	✓						✓	✓
Course 6: Pharmacology and Oncopathology	✓	✓							
Course 7 : “Clinical Oncology 2”	✓	✓	✓	✓	✓	✓	✓	✓	✓

Practical Skills (Patient Care)

Course	Program covered ILOs							
	2/3/1/A	2/3/1/B	2/3/1/C	2/3/1/D	2/3/1/E	2/3/1/F	2/3/1/G	2/3/1/H
Course 1 : Medical statistics								
Course 2 : Research Methodology								
Course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research				✓				✓
Course 4 : Physics of radiation and radiobiology)								
Course 5 : Internal Medicine & General Surgery								
Course 6 : Pharmacology and Oncopathology								
Course 7 : “Clinical Oncology 2”	✓	✓	✓	✓	✓	✓	✓	✓

Practical Skills (Patient Care)

Course	Program covered ILOs						
	2/3/1/I	2/3/1/J	2/3/1/K	2/3/1/L	2/3/1/M	2/3/1/N	2/3/1/O
Course 1 : Medical statistics							
Course 2 : Research Methodology							
Course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research	✓	✓					
Course 4: Physics of radiation and radiobiology)							
Course 5: Internal Medicine & General Surgery							
Course 6: Pharmacology and Oncopathology							
Course 7 : “Clinical Oncology 2”	✓	✓	✓	✓	✓	✓	✓

General Skills

Course	Program covered ILOs							
	2/3/2/A	2/3/2/B	2/3/2/C	2/3/2/D	2/3/2/E	2/3/2/F	2/3/2/G	2/3/2/H
Course 1 : Medical statistics		✓						
Course 2 : Research Methodology		✓		✓	✓			
Course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research								
Course 4: Physics of radiation and radiobiology)								
Course 5: Internal Medicine & General Surgery								
Course 6: Pharmacology and Oncopathology								
Course 7 : “Clinical Oncology 2”	✓	✓	✓	✓	✓	✓	✓	✓

General Skills

Course	Program covered ILOs							
	2/3/2/I	2/3/2/J	2/3/2/K	2/3/2/L	2/3/2/M	2/3/2/N	2/3/2/O	2/3/2/P
Course 1 : Medical statistics	✓	✓	✓					
Course 2 : Research Methodology	✓	✓						
Course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research				✓				
Course 4 : Physics of radiation and radiobiology)			✓	✓				
Course 5 : Internal Medicine & General Surgery			✓	✓				
Course 6 : Pharmacology and Oncopathology			✓	✓				
Course 7 : “Clinical Oncology 2”	✓	✓	✓	✓	✓	✓	✓	✓

General Skills

Course	Program covered ILOs						
	2/3/2/Q	2/3/2/R	2/3/2/S	2/3/2/T	2/3/2/U	2/3/2/V	2/3/2/W
Course 1 : Medical statistics							
Course 2: Research Methodology							
Course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research							
Course 4: Physics of radiation and radiobiology)	✓		✓				
Course 5: Internal Medicine & General Surgery	✓		✓				
Course 6: Pharmacology and Oncopathology	✓		✓				
Course 7 : “Clinical Oncology 2”	✓	✓	✓	✓	✓	✓	✓

(End of the program specifications)

